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10/2/2003
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11/10/05

State of Louisiana
Department of Environmental Quality



KATHLEEN BABINEAUX BLANCO
GOVERNOR

June 20, 2005

MIKE D. McDANIEL, Ph.D.
SECRETARY

Metroplex Industries, Inc.
14423 Cornerstone Village Drive
Houston, TX 77014

AI# 1036

Attention: Gary R. Horwitch, Agent for City of New Orleans

RE: Water Quality Certification (JP 050601-01/AI 1036/CER 20050001)
Corps of Engineers Permit (MVN-2005-1078-EGG)
Coastal Management Permit (P20050274)
Orleans Parish

Dear Mr. Horwitch:

We have received notification of your application for a Corps of Engineers permit for the construction of the Gentilly Landfill "Type III", off Almonaster Avenue in New Orleans, Louisiana in Orleans Parish. Prior to processing the Water Quality Certification, this office requires:

1. A non-commercial processing fee of \$33.00.
2. A detailed description of the Best Management Practices (BMPs) and/or other measures that will be implemented during the project to control non-point source pollution from the site. Information on BMPs may be found on the DEQ website at <http://nonpoint.deq.state.la.us> under the heading 1999 Non-point Source Management Plan. If this project is located in the Coastal Zone, you will also need to contact Greg Ducote with Coastal Management Division at 225-342-7591.
3. Assurance that a Stormwater Discharge Permit will be obtained, if required.
4. Assurance that all discharge permits will be obtained from this office for any discharges that will be generated from the site.

Be sure to include our reference number (JP 050601-01/AI 1036) on all responses. Please send all correspondence and your check or money order made payable to the LA Department of Environmental Quality to the following address:

LA DEQ/Registrations and Certifications
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Jamie Phillippe



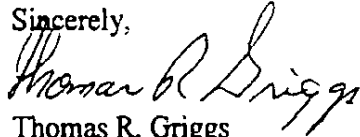
OFFICE OF ENVIRONMENTAL SERVICES • P.O. BOX 4313 • BATON ROUGE, LOUISIANA 70821-4313

AN EQUAL OPPORTUNITY EMPLOYER



If we haven't received this information within 30 days from the date of this letter, your application will be considered inactive. If you have any questions, please call Jamie Phillippe at 225-219-3469.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas R. Griggs".

Thomas R. Griggs
Engineer Manager

TRG/jjp

c: Corps of Engineers- New Orleans District
Coastal Management Division

PERMIT APPLICATION
FOR THE
GENTILLY LANDFILL "TYPE III"
ORLEANS PARISH, LOUISIANA

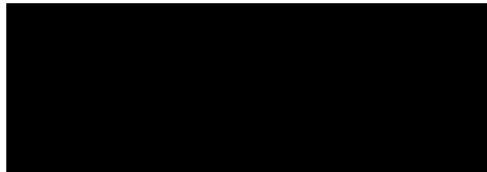
ATTACHMENT 6
LPDES NOTICE OF INTENT FORM

Prepared For:

CITY OF NEW ORLEANS
1340 Poydras Street
New Orleans, Louisiana 70112

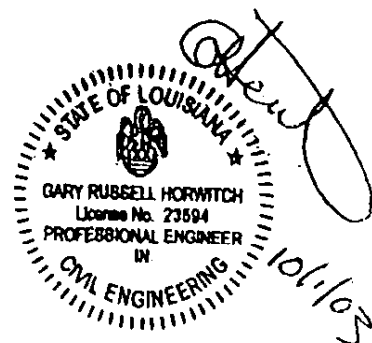
Prepared By:

METROPLEX INDUSTRIES, INC.
14423 Cornerstone Village Drive
Houston, Texas 77014-1206
(281) 440-5503



Gary R. Horwitch, P.E.

October 2003





October 1, 2003
Doc No. 029002/4734/4734-2
Job No. 029002-3

State of Louisiana
Department of Environmental Quality
Department of Environmental Services
Permits Division
P. O. Box 82215
Baton Rouge, Louisiana 70884-2215

Attn: Permits Division

Re: LPDES Storm Water Permit
Notice of Intent (NOI) Form C&D-G for a Louisiana Pollutant Discharge Elimination System Permit

Enclosed you will find three copies (one original and two copies) of a completed application of a Notice of Intent (NOI) Form C&D-G for a Louisiana Pollutant Discharge Elimination System (LPDES) Permit, authorized under the Environmental Protection Agency's (EPA) delegated National Pollutant Discharge Elimination System (NPDES) Program. This NOI is being submitted for the proposed Gentilly Landfill "Type III" located at 10200 Almonaster Avenue in Orleans Parish, New Orleans, LA. The Gentilly Landfill "Type III" is owned by the City of New Orleans and will be operated by AMID/METRO.

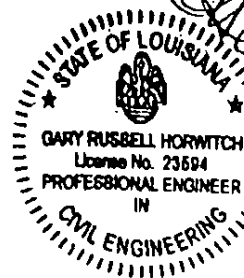
The proposed landfill will not accept putrescible waste. Only construction and demolition (C&D) and woodwaste will be accepted according to applicable Louisiana Department of Environmental Quality (LDEQ) regulations. The Gentilly Landfill "Type III" will be constructed over the previous Gentilly Landfill (former landfill), which has been undergoing closure since 1983 (stopped receiving waste in 1986) and is currently being closed and installation of the final cover system [2-feet (ft) of clay] is ongoing.

The proposed Gentilly Landfill "Type III" is intended to replace the current AMID Type III C&D Landfill that is nearing its design life (i.e., capacity) and its subsequent closure and to provide a long-term disposal site for the City of New Orleans and surrounding parishes. The proposed landfill will provide a replacement disposal site for a Type III waste stream that is currently being disposed of at the AMID Landfill.

Sincerely,

METROPLEX INDUSTRIES, INC.

Gary R. Horvitch, P.E.
Vice President



LPDES NOTICE OF INTENT FORM

LWDPS Permit No. WP
NPDES/LPDES Permit No. LA

Date: September 30, 2003

Please Check:

Initial Permit ☐
Permit Modification ☐
Permit Renewal ☐

Proposed/New Facility ☒
Existing Facility ☐

**STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Environmental Services, Permits Division
Post Office Box 82215
Baton Rouge, LA 70884-2215
PHONE#: (225) 765-0219 or (888) 763-5424**

LPDES NOTICE OF INTENT (C&D-G)

**CONSTRUCTION/DEMOLITION DEBRIS AND WOODWASTE
LANDFILLS
GENERAL PERMIT**

(Attach additional pages if needed.)

SECTION I - FACILITY INFORMATION

A. Permit is to be issued to the following: Please state the full legal name of the company.

1. Legal Name of Applicant: City of New Orleans
(Company, Partnership, Corporation, etc.)

Facility Name: Gentilly Landfill "Type III"

Mailing Address: City of New Orleans c/o Dept. of Sanitation
1340 Poydras St., Ste 750, New Orleans, LA 70112

If applicant named above is not also the owner, state owner name, phone # and address.

Applicant named above is also the Owner.

Please circle status: Federal State Parish Mun. Public Private Other

2. Location of facility. Please provide a specific street address, road, highway, or interstate location of the facility for which the application is being submitted.

10200 Almonaster Avenue

City: New Orleans Parish: Orleans

Front Gate

Coordinates: Latitude: 30 deg 00 min 15 sec

Longitude: 89 deg 58 min 24 sec

Is facility located on Indian Lands? No

Is the facility located adjacent to a Sanitary Landfill? Yes (Located on top of an existing landfill).

3. Name & Title of
Contact Person at Facility: Stephen F. Stumpf
Phone: (504) 737-3205 FAX: (504) 737-3905
Facility Federal Tax I.D. Number: 46-0466656
(nine digit number)

B. Name and address of responsible representative who completed the application:

Name & Title: Gary R. Horwitch, P.E. - Vice President
Company: Metroplex Industries, Inc.
Phone: (281) 440-5503 FAX: (281) 444-3376
Address: 14423 Cornerstone Village Drive
Houston, Texas 77014

C. Facility Information.

1. Other Permits. List all existing or pending DEQ and other environmental permits and permit numbers for the facility (NPDES, PSD, UIC, RCRA, other).

None for the Gentilly Landfill "Type III".

2. Water Discharge Permit Revision (if applicable): Please describe the requested revision to the existing permit.

No previous water discharge permit existed for this site. This section is N/A.

3. Source of water supply in gallons per day. List each source giving quality such as fresh, brackish, salt, hard, or soft; and give breakdown as to how each source is used.

Only minor amounts of water will be used at the facility for compaction of soils
used in landfill construction and for wetting highly trafficked, dusty, on-site
roadways.

D. Facility Operations.

1. **Processes used which produce industrial wastes discharged into waters of the State.** Please explain the operations in your facility in a comprehensive fashion. Explain how the wastewater discharges originate from the activities at your site.

See Attachment 1

E. Storm water: Complete the following for all storm water discharges.

Are storm water discharges covered by a storm water General Permit?

Yes X No _____

1. **Acreage.** For all outfalls that convey storm water only or that include storm water combined with other waste streams, give the area drained by the outfall in acreage, extent of impervious surfaces (paved areas, rooftops), and describe the activities that occur in that area.

See E.1 in Attachment 1

2. List all chemicals and petroleum products stored outside and provide a description of the containment area.

Diesel Fuel – 500 gallon tank – earthen secondary containment berms with
capacity of 500 gallons plus a minimum of 1-foot free board.

3. Describe all significant materials that are currently or in the past three years have been treated, stored, or disposed of in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

Not Applicable - The Gentilly Landfill "Type III" is a proposed facility and will not be constructed and operated until all applicable permits are obtained.

4. Provide information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak and the type and amount of material released.

Not Applicable - The Gentilly Landfill "Type III" is a proposed facility and will not be constructed and operated until all applicable permits are obtained.

5. Describe evaluation method for the presence of non-storm water discharges in storm water outfalls named in this application. For any storm water outfalls covered by this application, signature on page 17 constitutes certification that the outfalls have been tested or evaluated for the presence of non-storm water discharges, and that all non-storm water discharges from these outfall(s) are identified in this application. Refer to LAC 33:IX.2341.C.1.a.iii.

Attachment 1 contains the evaluation method used for the presence of non-storm water discharges in storm water outfalls named in this application.

F. Miscellaneous Discharges

Are there any other discharges to the waters of the state such as sanitary wastewaters, hydrostatic wastewaters, once-through noncontact cooling water, washdown water, etc? How are these waters discharged? Describe any treatment associated with each.

There will be no miscellaneous discharges.

G. History of site

1. Anticipated date or original date of startup or change in operations.

The anticipated date of start-up is by the end of 2003.

2. When did, or will, present operations start? 4th Quarter - 2003

3. If applicable, what previous operations were located at the site and what was the name of the facility?

An existing sanitary landfill (the Gentilly Landfill) exists at the site. The existing landfill has stopped receiving waste and is undergoing closure. The Gentilly Landfill "Type III" will be constructed entirely over the existing sanitary landfill to enhance the closure of the site.

4. If this is new construction, describe the site property prior to construction. For example, was it undisturbed or was there a previous structure on the site?

The Gentilly Landfill "Type III" will be constructed on top of an existing sanitary landfill that has stopped receiving waste and is undergoing closure.

5. If this is new construction, when did or when will the facility be completed? _____

Date: 4th Quarter 2003 for Support Facilities.

ATTACHMENT 1

ATTACHMENT 1
LPDES NOTICE OF INTENT - RESPONSE

D.1. Processes used which produce industrial wastes discharged into waters of the State. Please explain the operations in your facility in a comprehensive fashion. Explain how the wastewater discharges originate from the activities at your site.

RESPONSE: Construction/demolition/woodwaste (C&D) debris will enter the facility through the main entrance and be screened for non-acceptable materials at the guard gate. Acceptable waste will be taken to the landfill working area where it will be landfilled. Non-acceptable waste will be rejected immediately or stored in covered roll-off boxes to be disposed of off-site according to contents at least every seven days.

Upon placement of the C&D waste, daily, interim, and final cover soils will be placed over the waste in accordance with applicable regulations.

To minimize potential contact between natural precipitation and filled C&D waste, a series of storm water run-off control berms will be constructed to prevent storm water from coming in contact with debris at the active fill area. Interim run-off control berms will be constructed as the location of the working area varies. Non-contact storm water will be pumped outside of the run-off control berms to prevent disposal in standing water. A small temporary levee/berm separating the active and future fill areas of the site will be constructed to prevent surface water drainage through the facility and to any adjoining properties.

Storm water generated from rain falling on the cover material of the landfill will run-off into the perimeter ditch system where it will flow to the east, west, and eventually north to be discharged through the three outfalls located at the two access points along Almonaster Avenue.

In addition, drainage terraces will be constructed to approximately 25-foot vertical heights on the side slopes to prevent cover material erosion and sediment deposition in the perimeter ditches and offsite. Storm water collected from these drainage terraces will be routed into storm water flumes and then into the perimeter drainage ditch system where the storm water will be discharged off site.

E.1 Acreage. For all outfalls that convey storm water only or that include storm water combined with other waste streams, give the area

drained by the outfall in acreage, extent of impervious surfaces (paved areas, rooftops), and describe the activities that occur in that area.

RESPONSE:

Table 1

Gentilly Landfill ("Type III") During Facility Operation			
Outfall #	1	2	3
Total Area (acres)	77	38.7	75
Extent of Impervious surfaces and activities that occur in areas drained by outfall.	<p>3-20 yd³ roll-off boxes (covered for use in temporarily storing unacceptable waste.</p> <p>3,600- ft² office building for use as site office and security building.</p> <p>24,000-ft² all weather staging area for storage of on-site equipment, machinery and materials.</p> <p>30,000-ft² of permanent all-weather access road for use as landfill site access.</p> <p>74-acres landfilled C&D waste overlain by cover soils.</p> <p>1.6-acres of storm water flumes for use in drainage control of storm water from the landfill area.</p>	<p>38.0-acres landfilled C&D waste overlain by cover soils.</p> <p>0.7-acres of storm water flumes for use in drainage control of storm water from the landfill area</p>	<p>72.5-acres landfilled C&D waste overlain by cover soils.</p> <p>2.5-acres of storm water flumes for use in drainage control of storm water from the landfill area</p>

Gentilly Landfill ("Type III") Upon Final Closure			
Outfall #	1	2	3
Total Area (acres)	77	38.7	75
Extent of Impervious surfaces	<p>74-acres landfilled C&D waste overlain by cover soils.</p> <p>30,000-ft² of permanent all-weather access road for use as landfill site access.</p> <p>1.6-acres of storm water flumes for use in drainage control of storm water from the landfill area.</p>	<p>38.0-acres landfilled C&D waste overlain by cover soils.</p> <p>0.7-acres of storm water flumes for use in drainage control of storm water from the landfill area</p>	<p>72.5-acres landfilled C&D waste overlain by cover soils.</p> <p>2.5-acres of storm water flumes for use in drainage control of storm water from the landfill area.</p>

E.5.

Describe evaluation method for the presence of non-storm water discharges in storm water outfalls named in this application. For any storm water outfalls covered by this application, signature on page 17 constitutes certification that the outfalls have been tested or evaluated for the presence of non-storm water discharges, and that all non-storm water discharges from these outfall(s) are identified in this application. Refer to LAC 33:IX.2341.C.1.a.iii.

RESPONSE:

Upon placement of the C&D waste, weekly, interim, and final cover soils will be placed over the waste in accordance with applicable regulations.

To minimize potential contact between natural precipitation and filled C&D waste, a series of storm water run-off control berms will be constructed to prevent storm water from coming in contact with debris at the active fill area. Interim run-off control berms will be constructed as the location of the working area varies. Non-contact storm water will be pumped outside of the run-off control berms to prevent disposal in standing water. A small temporary levee/berm separating the active and future fill areas of the site will be constructed to prevent surface water drainage through the facility and to any adjoining properties.

Periodic inspection of the cover material and run-off control berms will occur to ensure that erosion does not cause storm water to come in contact with filled debris. In areas that contain erosion, maintenance of the cover soil and run-off control berms will be made.

Visual inspection of storm water entering run-off control berms, flumes, terraces, and perimeter ditch system will occur for the presence of non-storm water discharges by noting characteristics including color, sheen, odor, turbidity and the presence of debris.

OUTFALL NO. 1

6. Is this facility located in a designated industrial area? Yes X No

SECTION II - DISCHARGE INFORMATION

Complete Section II for each discharge outfall. Outfalls are discharge points. An external outfall is a discrete discharge point beyond which the waste stream receives no further mixing with other waste streams prior to discharging into a receiving water. An internal outfall is an outfall for a waste stream that combines with other waste stream(s) before discharging into an "external" outfall. Please provide your after-treatment test results in the units asked for on the application. For proposed facilities, estimates should be provided for any expected contaminants even though the facility is not in place yet.

- A. Complete this section for each discharge outfall.

1. **Outfall Location.** Provide a description of the physical location for each outfall and coordinates to the nearest 15 seconds (provide additional pages if more than one outfall).

Outfall No. 1

Latitude: 30 deg. 00 min. 33 sec. Longitude: 89 deg. 58 min. 6 sec.

2. If new discharge, when do you expect to begin discharging? 4th Quarter 2003
3. **Outfall Identification.** Provide: 1. A description of all operations contributing wastewater to the effluent for the outfall including process wastewater, sanitary wastewater, cooling water, and storm water runoff; 2. The average flow contributed by each operation; and 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

OUT-FALL No.	OPERATION(S) CONTRIBUTING FLOW		TREATMENT
	1. OPERATION (list)	2. AVERAGE FLOW (include units)	3. DESCRIPTION
1	Storm water from landfill (surface)	6219.0 ft ³ /day	None
	Storm water from staging area	47.0 ft ³ /day	None
	Storm water from access road	59.0 ft ³ /day	None
	Storm water from ancillary structures (i.e., storm water, flumes, and buildings)	142.3 ft ³ /day	None

4. Except storm water, if any of the applicant's discharges are intermittent or seasonal, please complete the following table.

FREQUENCY (specify average)		FLOW			
Days per Week	Which Months per Year	Flow Rate (mgd)		Total Volume (specify with units)	
		long term average	daily maximum	long term average	Daily maximum
N/A	N/A	N/A	N/A	N/A	N/A

Storm water only will be discharged.

5. Treatment Methods. Please be specific for each outfall.

Storm water is the only discharge from the facility. No treatment will occur.

6. Disposal. List any solid or liquid waste disposal methods and facilities. Include a description of the ultimate disposal of any solid or fluid wastes that are disposed of other than by discharge.

No liquid waste will be disposed of at this facility. Construction/demolition/wood-
waste (C&D) debris will enter the facility through the main entrance and be
screened for non-acceptable materials at the guard gate. Acceptable waste will be
taken to the landfill working area for disposal. Non-acceptable waste will be
rejected immediately or stored in covered roll-off boxes to be disposed of off-site
according to contents at least every seven days. Upon placement of the C&D waste,
weekly, interim, and final cover soils will be placed over the waste in accordance
with applicable regulations.

7. **Receiving Waters.** Indicate how the wastewater reaches state waters (named water bodies). This will usually be either "directly", by ☐ open ditch" (if it is a highway ditch, indicate the highway), or by "pipe". Please specifically name all of the minor water bodies that your wastewater will travel through on the way to a major water body. This information can be obtained from U.S.G.S. Quadrangle Maps. Include river mile of discharge point if available.

Wastewater Flows. CHECK ONE:

☐ directly; ☐ by open ditch; ☐ by pipe; ☒ by Almonaster Avenue (open ditch);
(specify)

into mile 10 of the Intracoastal Waterway; thence into the Mississippi River;

thence into Gulf of Mexico; thence into N/A
(name of stream, lake, marsh or underground horizon receiving the waste)

8. **Lab Analysis - All Dischargers:** Make additional copies as needed. Sampling and analytical protocols must conform to the requirements in LAC 33:IX.23 Subchapters B and V, and 40 CFR Part 136; when no analytical method is approved, the applicant may use any suitable method but must provide a description of the method. For storm water discharges, indicate date & duration of storm event sampled, total inches of precipitation, and number of hours since the end of the previous storm event which was greater than 0.1 inches.

For each outfall, this section must be completed for each pollutant unless the applicant demonstrates that a waiver for that pollutant is appropriate.

No lab analysis of storm water discharges has been performed since this is a proposed facility.

For Discharges of Landfill Wastewater (includes cell dewatering wastewater, vehicle wash water, and contaminated storm water) From a Construction/Demolition Debris and Woodwaste Landfill complete the table below. (Proposed facilities shall have up to two years from commencement of operations to complete and submit the information below. An estimate based on engineering calculations and/or knowledge may be submitted in the interim.):

OUTFALL NO. & DESCRIPTION: Outfall #1 Storm Water - No landfill wastewater will be discharged from this facility. Only storm water will be discharged. This section is non-applicable.				
POLLUTANT	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb./day)	
	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
BOD ₅				
COD				
TOC				
Oil and Grease				
Ammonia (as N)				
Alpha Terpineol				
Benzoic Acid				
Total Suspended Solids				
P-Cresol				
Toluene				
Total Zinc				
Total Copper				
Total Mercury				
Total Lead				
	Daily Maximum	Maximum 30-Day ¹	30-Day Low Flow ¹	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Washrack Wastewater, Maintenance and Repair Shop Floor Washdown complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #1 Storm Water – The Gentilly Landfill “Type III” does not contain a wash rack or maintenance and repair shop. This section is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lbs/day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
COD				
Oil and Grease				
Total Suspended Solids				
	Daily Maximum	Maximum 30-Day*	Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Soap and/or Detergents (Amounts Used)				
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Uncontaminated Storm Water From Areas Outside of the Construction/Demolition Debris and Woodwaste Landfill Area complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #1 - Open Ditch, Storm Water.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb./day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
COD				
TOC				
Oil and Grease				
	Daily Maximum	Maximum 30-Day*	30-Day Low Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

Non-applicable since this is a proposed facility. No laboratory analysis of uncontaminated storm water has been performed to date since this is a proposed facility.

For Discharges of Treated Sanitary Wastewater complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #1 Storm Water – No treated sanitary wastewater will be discharged. This item is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb./day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
BOD ₅				
Oil and Grease				
Total Suspended Solids				
Total Residual Chlorine (if chlorine is used)				
Fecal Coliform Colonies/100 ml				
	Daily Maximum	Max.	30-Day Low Flow*	Method of Measure/ Estimate
Flow (GPD)				
	Min.	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

10. **NEW SOURCE/DISCHARGERS DISCHARGING PROCESS WASTEWATER**
complete the following items a) and b):

- a) **ENGINEERING REPORT:** Are there any technical evaluations concerning your wastewater treatment system, including engineering reports or pilot plant studies?

There is no wastewater treatment system proposed for the site. Therefore,
this response is non-applicable.

- b) **SIMILAR OPERATIONS:** Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this facility with respect to processes, wastewater constituents, or wastewater treatment.

Crescent Acres Landfill - located approximately 1.14 miles south west of
the Gentilly Landfill "Type III".

- A. Were any of the analyses reported in Section II, Item A above performed by a contract lab or consulting firm? No If "yes", provide firm name and address, phone number, and pollutants analyzed.

No

- B. List pertinent physical and chemical properties (e.g., toxic components, taste and odor compounds, heavy metals, etc.) that may be associated with the discharge.

The Gentilly Landfill "Type III" will not discharge process wastewater.
Only clean storm water will be discharged.

- C. **Toxicity Data.** List any bioassay tests conducted on the effluent from the facility. Provide a summary of the test results.

No bioassay test have been performed since this is a proposed facility.

SECTION III - DIAGRAMS AND MAPS

- A. **Flow Diagram.** Attach a line drawing of the water flow through the facility with a water balance showing operations contributing wastewater to the effluent and treatment units. The water balance must show average and maximum flows at intake and discharge points and between units, including treatment units. If a water balance cannot be determined, the applicant may provide instead a pictorial description of the nature and amount of any sources of water and any collection and treatment measures.

See Appendix 1 for storm water drainage calculations.

- B. **Site Diagram.** Attach to this application a complete site diagram of the facility demonstrating how the wastewater flows through the facility into each clearly labeled discharge point (including all treatment points). Indicate storm water flow pattern on this map or provide additional maps if needed. Identify the location of the front gate of the facility.

See Figure 1 and Figure 2 located in Outfall No. 1, Attachment 2.

- C. **Topographic Map.** Attach to this application a topographic map (or other map if topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its discharge structures; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area. The wastewater pathway should be highlighted from the facility to the first named water body.

See Figure 3 located in Outfall No. 1, Attachment 2.

A U.S.G.S. 1:24,000 scale map (7.5' Quadrangle) would be appropriate for this item. Appropriate maps can be obtained from local government agencies such as DOTD or Office of Public Works. Private map companies can also supply these maps. If a map cannot be located through these sources, the U. S. Geological Survey can be contacted at the following address.

U. S. Geological Survey
Stennis Space Center
Bay St. Louis, MS 39529

Customer Services
(228)-688-3541

APPENDIX 1



Project: Gentilly Landfill "Type III"
Project No: 029002
Subject: Stormwater Analysis
Designer: JCM Date: 9/03/03
Checker: GRH Date: 9/03/03

SHEET 1 OF 6

PURPOSE: CALCULATE FINAL CLOSURE PEAK DISCHARGES AND EVALUATE THE PERIMETER DITCH SYSTEM BASED ON THE 25 YEAR - 24 HOUR EVENT.

DESIGN
PROCEDURES:

1. CALCULATE TIME OF CONCENTRATION (T_c) USING URBAN HYDROLOGY FOR SMALL WATERSHEDS (TR-55).

$T_c = T_t$ (TRAVEL TIME) WITH A MINIMUM T_c OF 10 MINUTES

$$T_t = \frac{L}{60 \cdot V}$$

L = FLOW LENGTH (FT)

V = AVERAGE VELOCITY (FT/SEC)

60 = CONVERSION FACTOR FROM SECONDS TO MINUTES

$$T_c = T_{\text{SHEET FLOW}} + T_{\text{SHALLOW CONCENTRATED FLOW}} + T_{\text{OPEN CHANNEL FLOW}}$$

SHEET FLOW (L < 490 FT)

(Kerby Method for overland flow)

Used in Hec-1 by the USACE

$$T_{\text{SHEET}} = \left(\frac{0.67n \cdot L_o}{\sqrt{S_o}} \right)^{0.467}$$

WHERE

T_t = (min)

S_o = Overland slope (ft/ft)

n = Overland roughness coefficient

L_o = length of overland flow (ft)



Project: Gentilly Landfill "Type III"
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SHEET 2 OF 6

SHALLOW CONCENTRATED FLOW

$$T_{\text{SHALLOW CONC.}} = \frac{L}{60 \left[16.1345 \cdot s^{\frac{1}{2}} \right]}$$

OPEN CHANNEL FLOW

$$T_{\text{OPEN CHNL.}} = \frac{L}{60 \left[\frac{1.49 \cdot r^{\frac{2}{3}} \cdot s^{\frac{1}{2}}}{n} \right]} \quad (\text{MANNINGS OPEN CHANNEL FLOW EQUATION})$$

r = HYDRAULIC RADIUS
s = CHANNEL SLOPE (ft/ft)
n = MANNINGS n

2. USE THE FOLLOWING SCS EQUATION FOR COMPUTATION OF LAG TIMES:

$$T_{\text{LAG}} = 0.6 \cdot T_c$$

WHERE T_{LAG} AND T_c EQUAL TIME IN HOURS.

3. USE THE HEC-1 COMPUTER PROGRAM FOR CALCULATING PEAK FLOWS.
4. USE MANNING'S EQUATION TO CALCULATE NORMAL DEPTHS IN THE PERIMETER DITCH SYSTEM.



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SHEET 3 OF 6

**DESIGN DATA
FOR CALCULATIONS:**

1. DRAINAGE AREAS

IDENTIFY FINAL CLOSURE DRAINAGE BASINS AS SHOWN ON THE ATTACHED DRAWING. SEE ATTACHED SPREADSHEET FOR A SUMMARY OF THE DRAINAGE BASIN AREAS.

2. PRECIPITATION

USE INFORMATION FROM TECHNICAL REPORT NO. 35 AND THE DODSON HEC-1 MANUAL TO DETERMINE THE PRECIPITATION DEPTH-DURATION-FREQUENCY INPUT DATA. SEE THE ATTACHED ISOPLETH MAPS.

STORM DURATION	25 YEAR FREQUENCY RAINFALL DEPTH (IN)
5 MINUTES	0.79
15 MINUTES	1.74
60 MINUTES	3.90
2 HOURS	5.0
3 HOURS	5.7
6 HOURS	7.1
12 HOURS	9.0
24 HOURS	12.0

3. HYDRAULIC RADIUS (R) FOR TRAVEL TIME CALCULATIONS.

SEE ATTACHED SPREADSHEET FOR HYDRAULIC RADIUS COMPUTATIONS FOR CLOSED LANDFILL CONDITIONS.



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4. MANNING'S ROUGHNESS COEFFICIENT

DESCRIPTION	MANNINGS "n"	REFERENCE
SHEET FLOW-- BERMUDA GRASS	.30	"DESIGN HYDROLOGY AND SEDIMENTOLOGY FOR SMALL CATCHMENTS", HAAN, BARFIELD, HAYES
OPEN CHANNEL FLOW -- SMALL DRAINAGE DITCHES	.04	"
OPEN CHANNEL FLOW -- CONCRETE LINED CHANNEL	.015	"

5. SCS CURVE NUMBERS

USE INFORMATION FROM TABLE 2-2A IN TR-55 TO DETERMINE SCS
CURVE NUMBERS.

AREA	CN	DISCUSSION
LANDFILL AREAS	89	ASSUME HYDROLOGIC SOIL GROUP D AND POOR GRASS CONDITIONS.

6. PERIMETER DITCH DETAILS

DITCH	BOTTOM WIDTH (FT)	BOTTOM SLOPE (FT/FT)	SIDE SLOPES (H:V)
EAST-1			
STA 0+00 TO STA 39+53	8'	0.0005	2:1 (OUTSIDE) 3:1 (INSIDE)
EAST-2			
STA 0+00 TO STA 33+77	8'	0.0005	2:1 (OUTSIDE) 3:1 (INSIDE)



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DITCH	BOTTOM WIDTH (FT)	BOTTOM SLOPE (FT/FT)	SIDE SLOPES (H:V)
WEST-1			
STA 0+00 TO STA 12+63	30'	0.0009	2:1
STA 12+63 TO STA 30+51	14'	0.001	3:1
STA 30+51 TO STA 45+70	14'	0.0005	2:1 (OUTSIDE) 3:1 (INSIDE)
STA 45+70 TO STA 77+62	14'	0.0005	2:1 3:1
WEST-2			
STA 0+00 TO STA 11+90	16'	0.001	2:1
STA 11+90 TO STA 25+88	6'	0.005	2:1
WEST 3			
STA 0+00 TO STA 3+29	6'	0.0005	2:1 (OUTSIDE) 3:1 (INSIDE)

*NOTE: THE WEST-3 DITCH SHALL FLOW INTO THE WEST-1 DITCH APPROXIMATELY AT STA 64+99.

RESULTS:

EAST-1 DITCH

STATION INTERVAL	DITCH WIDTH (FT)	CONTRIBUTING DRAINAGE AREAS	COMPUTED 25-YEAR PEAK FLOW (CFS)	NORMAL DEPTH (FT)
0+00 to 13+52	8	SUB-BASIN H, I, J, K	199	5.0
13+52 to 39+53	8	SUB-BASIN H, I, J	168	4.9

EAST-2 DITCH

STATION INTERVAL	DITCH WIDTH (FT)	CONTRIBUTING DRAINAGE AREAS	COMPUTED 25-YEAR PEAK FLOW (CFS)	NORMAL DEPTH (FT)
0+00 to 33+77	8	SUB-BASIN O, N, M, L	195	5.0



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THE EAST-1 AND EAST-2 DITCHES SHALL OUTLET INTO (3) 58" X 36" CORRUGATED METAL PIPE-ARCH CULVERTS. THE COMPUTED PEAK FLOW AT THE CULVERTS IS 264 CFS. ASSUMING INLET CONTROL, THE CALCULATED PEAK HEADWATER FOR THE PEAK FLOW IS 4.2 FT.

WEST-1 DITCH

STATION INTERVAL	DITCH WIDTH (FT)	CONTRIBUTING DRAINAGE AREAS	COMPUTED 25-YEAR PEAK FLOW (CFS)	NORMAL DEPTH (FT)
0+00 to 12+63	30	SUB-BASIN D, E, F, G	702	5.8
12+63 to 30+51	14	SUB-BASIN C, D, E, F, G	512	5.9
30+51 to 45+56	14	SUB-BASIN A, B, C, D, E, F, G	3693	6.1
45+56 to 77+62	14	SUB-BASIN A, B, C, D, E, F, G, R, S, U	314	5.5

WEST-2 DITCH

STATION INTERVAL	DITCH WIDTH (FT)	CONTRIBUTING DRAINAGE AREAS	COMPUTED 25-YEAR PEAK FLOW (CFS)	NORMAL DEPTH (FT)
0+00 to 11+90	16'	SUB-BASIN P, Q, T	112	2.7
11+90 to 25+88	6'	SUB-BASIN P, Q	94	3.8

WEST-3 DITCH

STATION INTERVAL	DITCH WIDTH (FT)	CONTRIBUTING DRAINAGE AREAS	COMPUTED 25-YEAR PEAK FLOW (CFS)	NORMAL DEPTH (FT)
0+00 to 3+29	6'	SUB-BASIN R, S	140	4.6

FOR THE ENTIRE PERIMETER DITCH SYSTEM, THERE WILL BE A MINIMUM OF 0.5 FEET OF FREEBOARD. SEE THE ATTACHED SPREADSHEETS AND HEC-1 PRINTOUTS FOR DETAILED CALCULATIONS.

Gentilly Landfill Final Closure Conditions Lag Time Computations			Prepared by: Date Prepared: Checked by: Data Checked:		JCM 7/31/2003
Basin Number(s)	Basin Area (ac)	Basin Area (sq mi)	Time of Concentration (min)	Lag Time (hr)	SCS Curve Number
A	8.2	0.0128	17.8	0.18	89
B	9.9	0.0155	14.7	0.15	89
C	13.1	0.0205	17.3	0.17	89
D	11.4	0.0178	16.6	0.17	89
E	13.5	0.0211	16.6	0.17	89
F	13.6	0.0213	14.3	0.14	89
G	12.4	0.0194	17.5	0.18	89
H	9.3	0.0145	13.3	0.13	89
I	7.4	0.0116	15.4	0.15	89
J	9.7	0.0152	17.0	0.17	89
K	5.3	0.0083	20.3	0.20	89
L	6.5	0.0102	10.7	0.11	89
M	5.3	0.0083	13.1	0.13	89
N	9.8	0.0153	15.6	0.16	89
O	9.3	0.0145	20.7	0.21	89
P	7.5	0.0117	18.9	0.19	89
Q	8.2	0.0128	17.2	0.17	89
R	13.4	0.0209	20.9	0.21	89
S	9.9	0.0155	14.7	0.15	89
T	2.6	0.0041	10.0	0.10	89
U	7.3	0.0114	11.0	0.11	89
TOTAL AREA		193.6			

Summary

DRAINAGE TYPE		Design standard for 12" of rainfall					
Basin No.	Drainage Type	Drainage Length (ft)	Slope (ft/ft)	Roughness Coefficient (n)	Hydraulic Radius (ft)	Velocity (ft/s)	Travel Time (min)
A	1	400	0.086	0.30	2.5	14.6	
	2	400	0.25	0.015	0.4	27.0	
	3	450	0.001	0.040	3.2	2.9	
Drainage Area (ac) = 8.2 Drainage Area (sq. mi.) = 0.0128							Total Travel Time (min) = 17.8 Time of Concentration (min) = 17.8 Lag Time (hr) = 0.18
DRAINAGE TYPE		Design standard for 12" of rainfall					
Basin No.	Drainage Type	Drainage Length (ft)	Slope (ft/ft)	Roughness Coefficient (n)	Hydraulic Radius (ft)	Velocity (ft/s)	Travel Time (min)
B	1	200	0.05	0.30	0.4	11.3	
	3	610	0.25	0.015	0.4	27.0	
	3	450	0.001	0.040	3.2	2.6	
Drainage Area (ac) = 9.9 Drainage Area (sq. mi.) = 0.0155							Total Travel Time (min) = 14.7 Time of Concentration (min) = 14.7 Lag Time (hr) = 0.15

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
C	1	140	9.5
	3	610	0.4
	3	800	7.4
Drainage Area (ac) =		13.1	17.3
Drainage Area (sq.mi.) =		0.0205	17.3
			0.17
Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
D	1	130	9.2
	3	130	1.3
	3	610	0.4
	3	620	5.7
Drainage Area (ac) =		11.4	16.6
Drainage Area (sq.mi.) =		0.0178	18.6
			0.17
Total Travel Time (min) =			
Time of Concentration (min) =			
Lag Time (hr) =			

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
E	1	110	8.5
	3	380	3.8
	3	610	0.4
	3	420	3.9
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Basin No.	Drainage Type	Slope (ft/ft)	Velocity (ft/s)
F	1	0.03	n/a
	3	0.005	1.7
	3	0.25	27.0
	3	0.0005	1.8
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
F	1	50	5.9
	3	400	4.0
	3	610	0.4
	3	430	4.0
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Basin No.	Drainage Type	Roughness Coefficient (n)	Velocity (ft/s)
F	1	0.30	n/a
	3	0.04	1.7
	3	0.015	27.0
	3	0.04	1.8
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Basin No.	Drainage Type	Slope (ft/ft)	Velocity (ft/s)
F	1	0.03	n/a
	3	0.005	1.7
	3	0.25	27.0
	3	0.0005	1.8
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
G	1	180	10.2
	3	200	2.0
	3	610	0.4
	3	540	5.0
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Slope (ft/ft) Roughness Coefficient (n) Hydraulic Radius (ft) Velocity (ft/s)			
0.05 0.30 n/a n/a			
0.005 0.04 0.5 1.7			
0.25 0.015 0.4 27.0			
0.0005 0.04 3.2 1.8			
Slope (ft/ft) Roughness Coefficient (n) Hydraulic Radius (ft) Velocity (ft/s)			
0.05 0.30 n/a n/a			
0.005 0.04 0.5 1.7			
0.25 0.015 0.4 27.0			
0.0005 0.04 2.7 1.6			
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Slope (ft/ft) Roughness Coefficient (n) Hydraulic Radius (ft) Velocity (ft/s)			
0.05 0.30 n/a n/a			
0.005 0.04 0.5 1.7			
0.25 0.015 0.4 27.0			
0.0005 0.04 2.7 1.6			
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Slope (ft/ft) Roughness Coefficient (n) Hydraulic Radius (ft) Velocity (ft/s)			
0.05 0.30 n/a n/a			
0.005 0.04 0.5 1.7			
0.25 0.015 0.4 27.0			
0.0005 0.04 2.7 1.6			
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
1	1	70	6.9
	3	400	1.7
	3	390	0.2
	3	410	4.2
Drainage Area (ac) = Drainage Area (sq.mi.) =		Slope (ft/ft) 0.05 0.005 0.25 0.0005	Roughness Coefficient (n) 0.30 0.04 0.015 0.04
		Hydraulic Radius (ft) n/a 0.5 0.4 2.7	Velocity (ft/s) n/a 1.7 27.0 1.6
		Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =	
		15.4 15.4 0.15	
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
J	1	100	8.2
	3	150	1.5
	3	580	0.4
	3	670	6.9
Drainage Area (ac) = Drainage Area (sq.mi.) =		Slope (ft/ft) 0.05 0.005 0.25 0.0005	Roughness Coefficient (n) 0.30 0.04 0.015 0.04
		Hydraulic Radius (ft) n/a 0.5 0.4 2.7	Velocity (ft/s) n/a 1.7 27.0 1.6
		Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =	
		17.0 17.0 0.17	

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
K	1	150	9.9
	3	470	4.7
	3	350	0.2
Drainage Area (ac) = Drainage Area (sq.mi.) =		Roughness Coefficient (n) Hydraulic Radius (r) Slope (ft/ft) Velocity (ft/s)	Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =
		0.30 N/A 0.05 N/A	14.8 14.8 0.15
		0.04 0.5 0.005 1.7	
		0.015 0.4 0.25 27.0	
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
L	1	50	5.9
	3	360	0.2
	3	400	4.1
Drainage Area (ac) = Drainage Area (sq.mi.) =		Roughness Coefficient (n) Hydraulic Radius (r) Slope (ft/ft) Velocity (ft/s)	Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =
		0.30 N/A 0.05 N/A	10.3 10.3 0.10
		0.015 0.4 0.0005 1.6	
		0.040 2.7 0.0005 1.6	

Genully Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRWGRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
M	1	60	8.4
	3	250	2.5
	3	380	0.2
	3	290	3.0
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
N	1	110	8.5
	3	250	2.5
	3	470	0.3
	3	80	0.8
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	

Genitilly Landfill Final Closure Conditions		Prepared by: JCM	
Lag Time Computations		Date Prepared: 7/31/2003	
		Checked by: PRM/GRH	
		Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
0	1	100	8.2
	3	270	2.7
	3	430	0.3
	3	640	6.6
Drainage Area (ac) = Drainage Area (sq.mi.) =		Roughness Coefficient (n) Slope (ft/ft) Hydraulic Radius (ft) Velocity (ft/s)	Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =
		0.30 0.005 n/a 1.7	17.8 17.8 0.18
Drainage Area (ac) = Drainage Area (sq.mi.) =			
		0.04 0.015 0.04 2.7	1.6
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
P	1	110	8.5
	3	150	1.5
	3	610	0.4
	3	500	5.0
Drainage Area (ac) = Drainage Area (sq.mi.) =		Roughness Coefficient (n) Slope (ft/ft) Hydraulic Radius (ft) Velocity (ft/s)	Total Travel Time (min) = Time of Concentration (min) = Lag Time (hr) =
		0.30 0.005 n/a 1.7	15.5 15.5 0.15
		0.04 0.015 0.04 2.8	1.7

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE			
1	= Sheet Flow		
2	= Shallow Concentrated Flow		
3	= Open Channel Flow		
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
Q	1	100	8.2
	3	170	1.7
	3	610	0.4
	3	400	4.0
		Slope (ft/ft)	Velocity (ft/s)
		0.05	N/A
		0.005	1.7
		0.25	27.0
		0.0005	1.7
		Roughness Coefficient (n)	
		0.30	
		0.04	
		0.015	
		0.04	
		Hydraulic Radius (ft)	
		N/A	
		0.5	
		0.4	
		2.8	
		Total Travel Time (min) =	14.3
		Time of Concentration (min) =	14.3
		Lag Time (hr) =	0.14
		Drainage Area (ac) =	8.2
		Drainage Area (sq.mi.) =	0.0128
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
R	1	120	8.9
	3	400	1.7
	3	610	0.4
	3	370	3.7
		Slope (ft/ft)	Velocity (ft/s)
		0.05	N/A
		0.005	1.7
		0.25	27.0
		0.0005	1.7
		Roughness Coefficient (n)	
		0.30	
		0.04	
		0.015	
		0.04	
		Hydraulic Radius (ft)	
		N/A	
		0.5	
		0.4	
		2.8	
		Total Travel Time (min) =	17.0
		Time of Concentration (min) =	17.0
		Lag Time (hr) =	0.17
		Drainage Area (ac) =	13.4
		Drainage Area (sq.mi.) =	0.0209

Genility Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 = Sheet Flow 2 = Shallow Concentrated Flow 3 = Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
S	1	100	8.2
	3	50	0.5
	3	1100	1.1
	3	250	0.2
	3	150	0.1
	3	250	1.8
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
T	3	1190	63.6
Drainage Area (ac) =		Total Travel Time (min) =	
Drainage Area (sq.mi.) =		Time of Concentration (min) =	
		Lag Time (hr) =	

Gentilly Landfill Final Closure Conditions		Prepared by: JCM Date Prepared: 7/31/2003	
Lag Time Computations		Checked by: PRM/GRH Date Checked:	
DRAINAGE TYPE 1 <input type="checkbox"/> Sheet Flow 2 <input type="checkbox"/> Shallow Concentrated Flow 3 <input type="checkbox"/> Open Channel Flow			
Design standard for 12" of rainfall			
Basin No.	Drainage Type	Drainage Length (ft)	Travel Time (min)
U	3	1263	61.3
Drainage Area (ac) = Drainage Area (sq.mi.) =		Slope (ft/ft) = 0.0009 Roughness Coefficient (n) = 0.30 Hydraulic Radius (ft) = 3.5 Velocity (ft/s) = 0.3	Total Travel Time (min) = 61.3 Time of Concentration (min) = 61.3 Lag Time (hr) = 0.61

Gentilly Landfill
 Hydraulic Radius Calculations for
 Typical Peak Flow Conditions

Project NO. 029002
 Designer: JCM
 Date: 07-30-2003

Top Slope at Runoff Control Berm		Storm Water Flume		2' Ditch		6' Ditch	
left slope=	25 (H:1)	left slope=	2 (H:1)	left slope=	2 (H:1)	left slope=	2 (H:1)
right slope=	4 (H:1)	right slope=	2 (H:1)	right slope=	3 (H:1)	right slope=	3 (H:1)
bottom width=	0 (ft)	bottom width=	5 (ft)	bottom width=	2 (ft)	bottom width=	6 (ft)
Flow depth=	1	Flow depth=	0.5	Flow depth=	5	Flow depth=	4.81
Area=	14.5	Area=	3.0	Area=	72.5	Area=	86.7
Perimeter	29.1	Perimeter	7.2	Perimeter	29.0	Perimeter	32.0
R=	0.5	R=	0.4	R=	2.5	R=	2.7
8' Ditch		14' Ditch		16' Ditch		30' Ditch	
left slope=	2 (H:1)	left slope=	2	left slope=	2 (H:1)	left slope=	2 (H:1)
right slope=	3 (H:1)	right slope=	3 (H:1)	right slope=	2 (H:1)	right slope=	2 (H:1)
bottom width=	8 (ft)	bottom width=	14 (ft)	bottom width=	16 (ft)	bottom width=	30 (ft)
Flow depth=	5.31	Flow depth=	6.35	Flow depth=	2.73	Flow depth=	5.75
Area=	113.0	Area=	190	Area=	58.6	Area=	238.6
Perimeter	36.7	Perimeter	48.3	Perimeter	28.2	Perimeter	55.7
R=	3.1	R=	3.9	R=	2.1	R=	4.3

Steady Flow Data

The user is required to enter the following information: the number of profiles to be calculated; the peak flow data (at least one flow for every river reach and every profile); and any required boundary conditions. The user should enter the number of profiles first. The next step is to enter the flow data. Flow data are entered directly into the table. Use the mouse pointer to select the box in which to enter the flow then type in the desired value.

Flow data are entered from upstream to downstream for each reach. At least one flow value must be entered for each reach in the river system. Once a flow value is entered at the upstream end of a reach, it is assumed that the flow remains constant until another flow value is encountered within the reach. The flow data can be changed at any cross section within a reach. To add a flow change location to the table, first select the reach in which you would like to change the flow (from the river and reach boxes above the table). Next, select the River Station location for which you want to enter a flow change. Then press the Add Flow Change Location button. The new flow change location will appear in the table.

Flow Change Location		Profile Names and Flow Rates		
Reach	River Station	100 Year	50 Year	100 Year
1	100	500	1500	
2	500	2000	5000	
3	600	2500	6500	
4	650	2700	7000	

Figure 7.1 Steady Flow Data Editor

Each profile is automatically assigned a title based on the profile number, such as profile #1 is assigned a title of "Prof #1," profile #2 is assigned a title of "Prof #2," etc. The user can rename the title for each profile by simply going into the options menu and selecting Edit Profile Names. Once this option is selected, a dialog will appear allowing you to rename each of the profile titles.

☒ Boundary Conditions

Boundary Conditions

After all of the flow data have been entered into the table, the next step is to enter any boundary conditions that may be required. To enter boundary conditions data, press the **Boundary Conditions** button at the top right of the steady flow data editor. The boundary conditions editor should appear as shown in Figure 7.2.

Boundary conditions are necessary to establish the starting water surface at the ends of the river system (upstream and downstream). A starting water surface is necessary in order for the program to begin the calculations. In a subcritical flow regime, boundary conditions are only necessary at the downstream ends of the river system. If a supercritical flow regime is going to be calculated, boundary conditions are only necessary at the upstream ends of the river system. If a mixed flow regime calculation is going to be made, then boundary conditions must be entered at all ends of the river system.

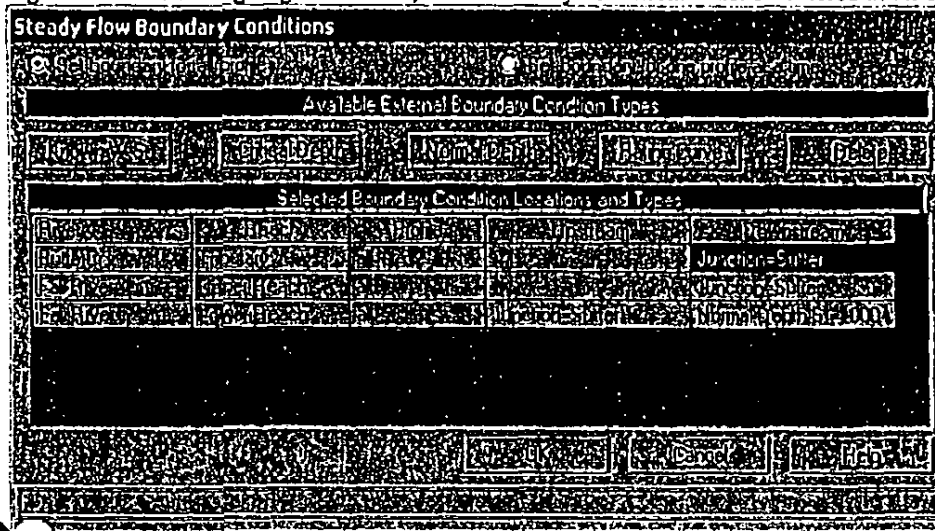


Figure 7.2 Steady Flow Boundary Conditions Editor

The boundary conditions editor contains a table listing every reach. Each reach has an upstream and a downstream boundary condition. Connections to junctions are considered internal boundary conditions. Internal boundary conditions are automatically listed in the table, based on how the river system was defined in the geometric data editor. The user is only required to enter the necessary external boundary conditions.

To enter a boundary condition, first use the mouse pointer to select the cell location in which you would like to enter a boundary condition. Then select the type of boundary condition from the four available types listed above the table. The four types of boundary conditions consist of:

Known Water Surface Elevations - For this boundary condition the user must enter a known water surface for each of the profiles to be computed.

Critical Depth - When this type of boundary condition is selected, the user is not required to enter any further information. The program will calculate critical depth for each of the profiles and use that as the boundary condition.


Normal Depth - For this type of boundary condition, the user is required to enter an energy slope that will be used in calculating normal depth (Manning's equation) at that location. A normal depth will be calculated for each profile based on the user-entered slope. If the energy slope is unknown, the user could approximate it by entering either the slope of the water surface or the slope of the channel bottom.

Rating Curve - When this type of boundary condition is selected, a pop up window appears allowing the user to enter an elevation versus flow rating curve. For each profile, the elevation is interpolated from the rating curve given the flow.

An additional feature of the boundary condition editor is that the user can specify a different type of boundary condition for each profile at the same location. This is accomplished by first selecting the option that says "Set boundary for one profile at a time" at the top of the window. When this option is selected, the table will expand out to provide a row for each profile,

at every location. The user can then select the location and profile for which they would like to change the boundary condition type.

Once all the boundary conditions data are entered, press the **OK** button to return to the steady flow data editor. Press the **ly Data** button to have the data accepted.

 Steady Flow Data Options



Project: Gentilly Landfill - Phase III
Project No: 029002
Subject: Conveyance Structure Design
Designer: JCM Date: 9/03/03
Checker: GRH Date: 9/03/03

SHEET 1 OF 3

PURPOSE: DETERMINE THE REQUIRED DIMENSIONS OF THE VARIOUS FLOW CONVEYANCE STRUCTURES ASSOCIATED WITH THE SITE.

DESIGN

PROCEDURES:

1. USE THE 25-YEAR PEAK FLOWS COMPUTED BASED ON FINAL CLOSURE CONDITIONS.
2. DETERMINE FLOW CONVEYANCE STRUCTURE SIZE REQUIREMENTS BASED ON NORMAL FLOW CAPACITY AS DETERMINED BY MANNINGS EQUATION.

$$Q = \frac{1.49}{n} A \cdot R^{\frac{2}{3}} \cdot S^{\frac{1}{2}}$$

DESIGN CALCULATIONS

1. RUNOFF CONTROL BERM

THE RUNOFF CONTROL BERM IS LOCATED ALONG THE PERIMETER OF THE TOP SLOPE PORTION OF THE LANDFILL TO DIRECT STORM WATER RUNOFF FROM TOP SLOPE AREAS TO THE STORM WATER FLUMES.

DETERMINE THE LARGEST TOP SLOPE DRAINAGE AREA TO DETERMINE IF THE RUNOFF CONTROL BERM FOR EACH LANDFILL AREA PROVIDES SUFFICIENT CAPACITY TO DIRECT THE STORM WATER FLOW TO THE STORM WATER FLUME.

THE LARGEST TOP SLOPE DRAINAGE AREA FOR THE GENTILLY LANDFILL IS LOCATED IN AREA "S". THE 25-YEAR PEAK FLOW FROM THIS DRAINAGE AREA IS 16.5 CFS.

USING MANNINGS EQUATION, DETERMINE THE NORMAL DEPTH OF THE PEAK FLOW AND THE MAXIMUM FLOW CAPACITY BASED ON A DEPTH OF 2.1 FEET. SEE THE ATTACHED SPREADSHEET FOR THE CALCULATIONS.



Project: Gentilly Landfill - Phase III
Project No: 029002
Subject: Conveyance Structure Design
Designer: JCM Date: 9/03/03
Checker: GRH Date: 9/03/03

SHEET 2 OF 3

NORMAL DEPTH FOR THE PEAK FLOW IS 1.50 FEET. MAXIMUM FLOW FOR A DEPTH OF 2.1 FEET EQUAL 40.2 CFS, WHICH IS MUCH GREATER THAN THE REQUIRED FLOW OF 16.5 CFS. THEREFORE, THE CONVEYANCE CAPACITY PROVIDED BY THE RUNOFF CONTROL BERM IS SUFFICIENT.

2. SIDE SLOPE TERRACE

TERRACES ARE LOCATED ALONG THE SIDE SLOPES OF EACH LANDFILL TO DIRECT STORM WATER RUNOFF FROM THESE AREAS TO THE STORM WATER FLUMES.

DETERMINE THE LARGEST AREA DRAINING TO A TERRACE TO DETERMINE IF THE TERRACE PROVIDES SUFFICIENT CAPACITY TO DIRECT STORM WATER RUNOFF TO THE STORM WATER FLUME.

THE LARGEST AREA DRAINING TO A TERRACE FOR THE GENTILLY LANDFILL IS LOCATED IN DRAINAGE BASIN AREA "C" (SEE ATTACHED DRAWING). THE 25-YEAR PEAK FLOW FROM THIS DRAINAGE AREA OF 2.79 ACRES IS 18.3 CFS.

USING MANNINGS EQUATION, DETERMINE THE NORMAL DEPTH OF THE PEAK FLOW AND THE MAXIMUM FLOW CAPACITY BASED ON A DEPTH OF 2 FEET. SEE THE ATTACHED SPREADSHEET FOR THE CALCULATIONS.

NORMAL DEPTH FOR THE PEAK FLOW IS 1.56 FEET. MAXIMUM FLOW FOR A DEPTH OF 2 FEET EQUAL 35.3 CFS, WHICH IS MUCH GREATER THAN THE REQUIRED FLOW OF 18.3 CFS. THEREFORE, THE CONVEYANCE CAPACITY PROVIDED BY THE SIDE SLOPE TERRACES IS SUFFICIENT.

3. STORM WATER FLUME

THE STORM WATER FLUMES ARE PROVIDED TO DIRECT STORM WATER RUNOFF FROM THE TOP AND SIDE SLOPE AREAS TO THE PERIMETER DITCH SYSTEM. THE STORMWATER FLUMES HAVE A 5 FOOT BOTTOM WITH 3H:1V SIDE SLOPES.



Project: Gentilly Landfill - Phase III
Project No: 029002
Subject: Conveyance Structure Design
Designer: JCM Date: 9/03/03
Checker: GRH Date: 9/03/03

SHEET 3 OF 3

DETERMINE THE LARGEST AREA DRAINING TO A FLUME TO DETERMINE IF THE STORM WATER FLUMES PROVIDE SUFFICIENT CAPACITY TO DIRECT THE STORM WATER FLOW TO THE PERIMETER DITCH SYSTEM.

THE LARGEST AREA DRAINING TO A FLUME FOR THE GENTILLY LANDFILL CONSISTS OF DRAINAGE AREA "F". THE 25-YEAR PEAK FLOW FROM THIS DRAINAGE AREA IS 89 CFS AS SHOWN IN THE ATTACHED PEAK FLOW CALCULATIONS.

USING MANNINGS EQUATION, DETERMINE THE NORMAL DEPTH OF THE PEAK FLOW AND THE MAXIMUM FLOW CAPACITY BASED ON A DEPTH OF 1 FOOT. SEE THE ATTACHED SPREADSHEET FOR THE CALCULATIONS.

NORMAL DEPTH FOR THE PEAK FLOW IS 0.51 FEET. MAXIMUM FLOW FOR A DEPTH OF 1 FOOT EQUALS 314.3 CFS, WHICH IS MUCH GREATER THAN THE REQUIRED FLOW OF 89 CFS. THEREFORE, THE CONVEYANCE CAPACITY PROVIDED BY THE STORM WATER FLUME IS SUFFICIENT.

**Gentilly 30" CMP Culvert
Worksheet for Circular Channel**

Project Description	
Project File	untitled
Worksheet	Gentilly 30" CMP
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Full Flow Capacity

Input Data	
Mannings Coefficient	0.024
Channel Slope	0.003500 ft/ft
Diameter	2.50 ft

Results		
Depth	2.50	ft
Discharge	13.14	ft ³ /s
Flow Area	4.91	ft ²
Wetted Perimeter	7.85	ft
Top Width	0.00	ft
Critical Depth	1.22	ft
Percent Full	100.00	%
Critical Slope	0.015263	ft/ft
Velocity	2.68	ft/s
Velocity Head	0.11	ft
Specific Energy	FULL	ft
Froude Number	FULL	
Maximum Discharge	14.14	ft ³ /s
Full Flow Capacity	13.14	ft ³ /s
Full Flow Slope	0.003500	ft/ft

**Gentilly 30" CMP Culvert - 814 cfs
Worksheet for Circular Channel**

Project Description	
Project File	untitled
Worksheet	Gentilly 30" CMP
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Diameter

Input Data	
Mannings Coefficient	0.024
Channel Slope	0.003500 ft/ft
Depth	11.75 ft
Discharge	814.00 ft ³ /s

Results	
Diameter	11.75 ft
Flow Area	108.37 ft ²
Wetted Perimeter	36.90 ft
Top Width	0.00 ft
Critical Depth	6.55 ft
Percent Full	100.00 %
Critical Slope	0.009738 ft/ft
Velocity	7.51 ft/s
Velocity Head	0.88 ft
Specific Energy	FULL ft
Froude Number	FULL
Maximum Discharge	875.62 ft ³ /s
Full Flow Capacity	814.00 ft ³ /s
Full Flow Slope	0.003500 ft/ft

Gentilly Landfill

Prepared by: JCM
Date Prepared: 7/30/2003

Precipitation Frequency
Duration Calculations

Checked by: PRM/GRH
Date Checked: 7/31/2003

2 year - 5 minute Precipitation =	0.58
100 year - 5 minute Precipitation =	0.92
Computed 25 year - 5 minute Precipitation =	0.79

2 year - 15 minute Precipitation =	1.25
100 year - 15 minute Precipitation =	2.05
Computed 25 year - 15 minute Precipitation =	1.74

2 year - 60 minute Precipitation =	2.45
100 year - 60 minute Precipitation =	4.75
Computed 25 year - 60 minute Precipitation =	3.90

differences between adjacent grid points on the six maps were compared to discover any places where one map or set of maps showed increasing values where other maps or sets of maps were indicating decreasing values. This does not imply that values on all maps must move parallel to each other, but that nonparallel movement be examined to insure that the trends are intended by the analyst. A case of validated nonparallelism is illustrated in the Northern Plains States, where the ridge in the isopluvials shifts westward with increasing return period.

INTERMEDIATE DURATIONS AND RETURN PERIODS

10- and 30-Min Relations

The procedure discussed under "Methodology" was used to derive equations to estimate the 10-min values from 5- and 15-min, and 30-min values from 15- and 60-min values. The station data were first grouped geographically, and separate equations derived for each area and for the 2- and 100-yr return period. Neither geographical nor return period differences were significant, and one equation for the 10-min estimation and one equation for 30-min estimation were adopted. They are:

$$10\text{-min value} = 0.59 (15\text{-min value}) + 0.41 (5\text{-min value}) \quad (7)$$

$$30\text{-min value} = 0.49 (60\text{-min value}) + 0.51 (15\text{-min value}) \quad (8)$$

The graphical solution to these equations is shown in figure 10. The ordinate scale is linear. It is left unlabeled so that the user can label as appropriate for the range of data being used.

Intermediate Return Periods

A mathematical solution of the Gumbel equations for the partial duration series results in the following equations to compute values for selected return periods intermediate to the 2- and 100-yr values.

$$5\text{-yr} = 0.278 (100\text{-yr}) + 0.674 (2\text{-yr}) \quad (9)$$

$$10\text{-yr} = 0.449 (100\text{-yr}) + 0.496 (2\text{-yr}) \quad (10)$$

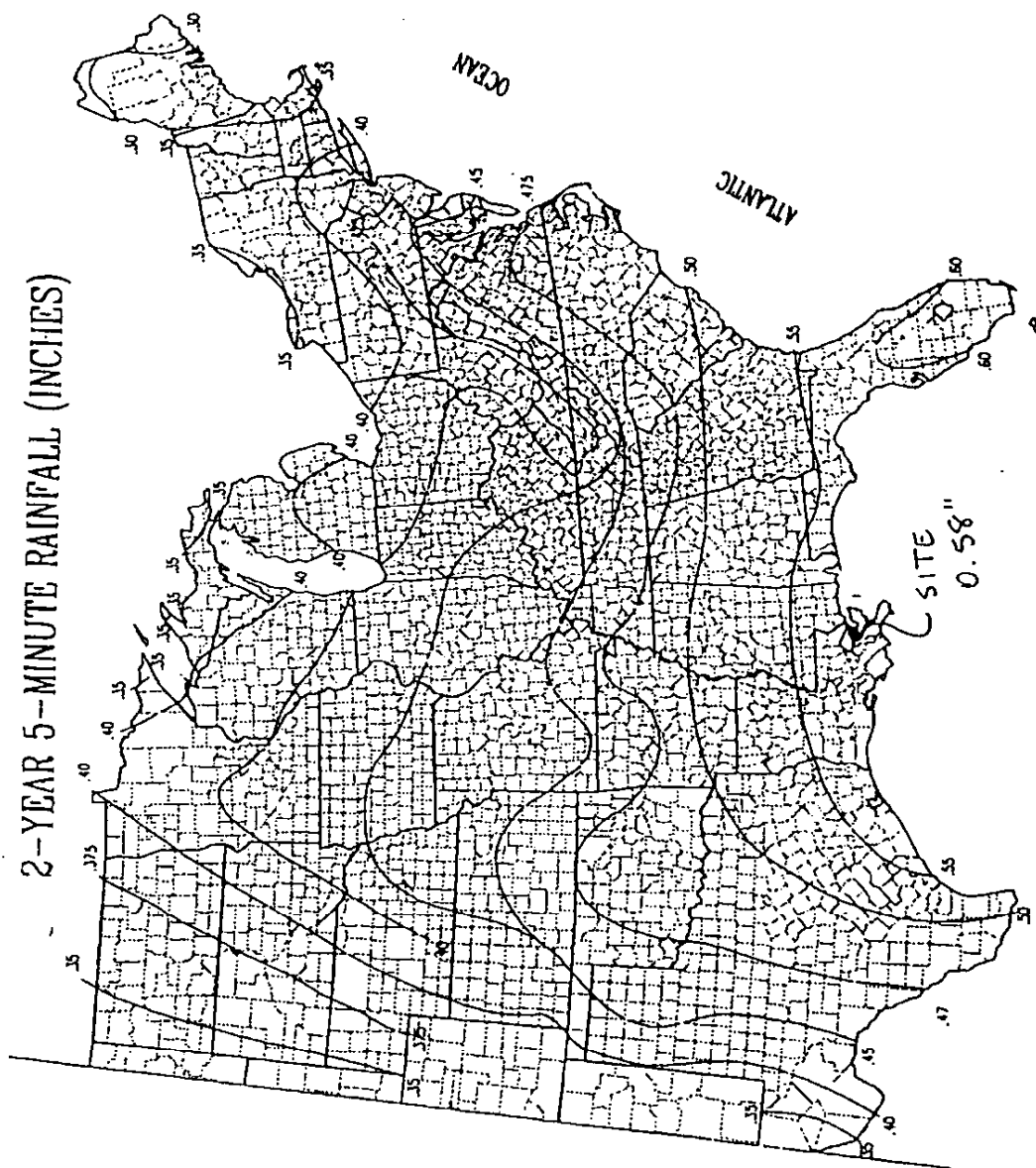
$$25\text{-yr} = 0.669 (100\text{-yr}) + 0.293 (2\text{-yr}) \quad (11)$$

$$50\text{-yr} = 0.835 (100\text{-yr}) + 0.146 (2\text{-yr}) \quad (12)$$

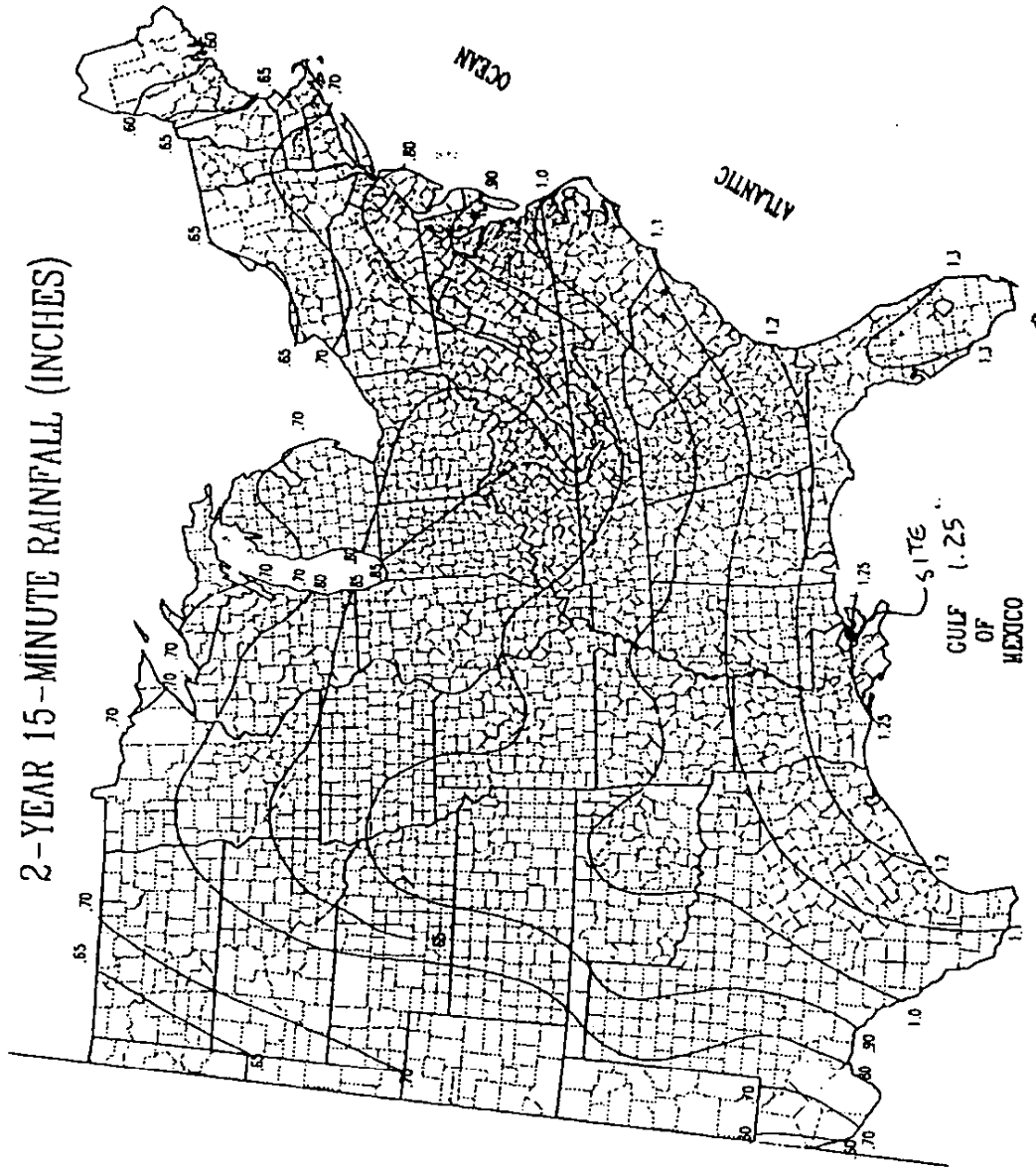
INTERPRETATION OF RESULTS

PHYSIOGRAPHIC AND METEOROLOGICAL EFFECTS

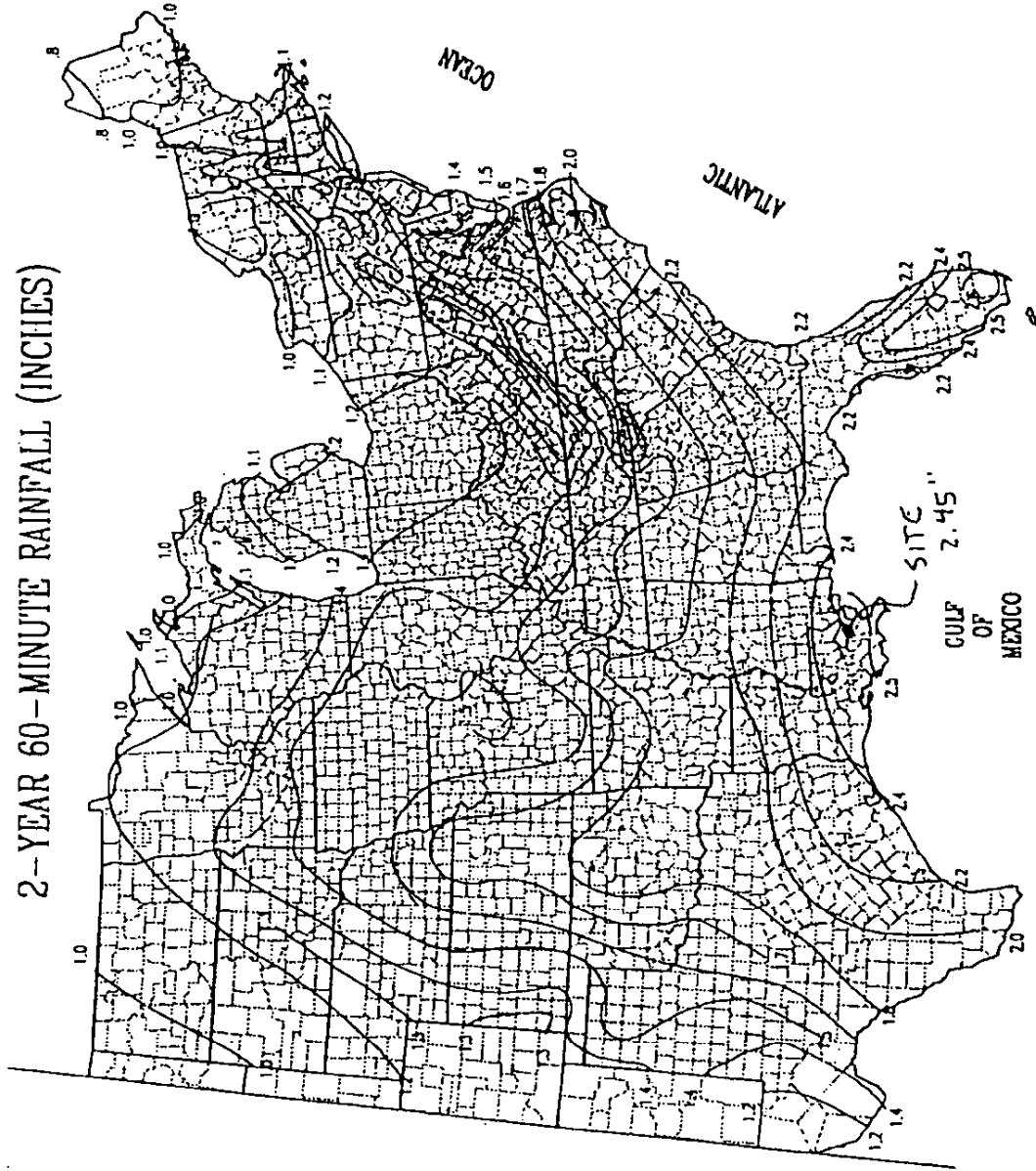
The center of low precipitation frequencies depicted in Northern Missouri is validated by the fact that this is also a center of low frequency of tornadoes (Fujita 1976) compared to the surrounding regions. High-intensity, short-duration rainfalls and tornadoes are both associated with convective storms. We do not know whether this anomaly is a shadow effect of the



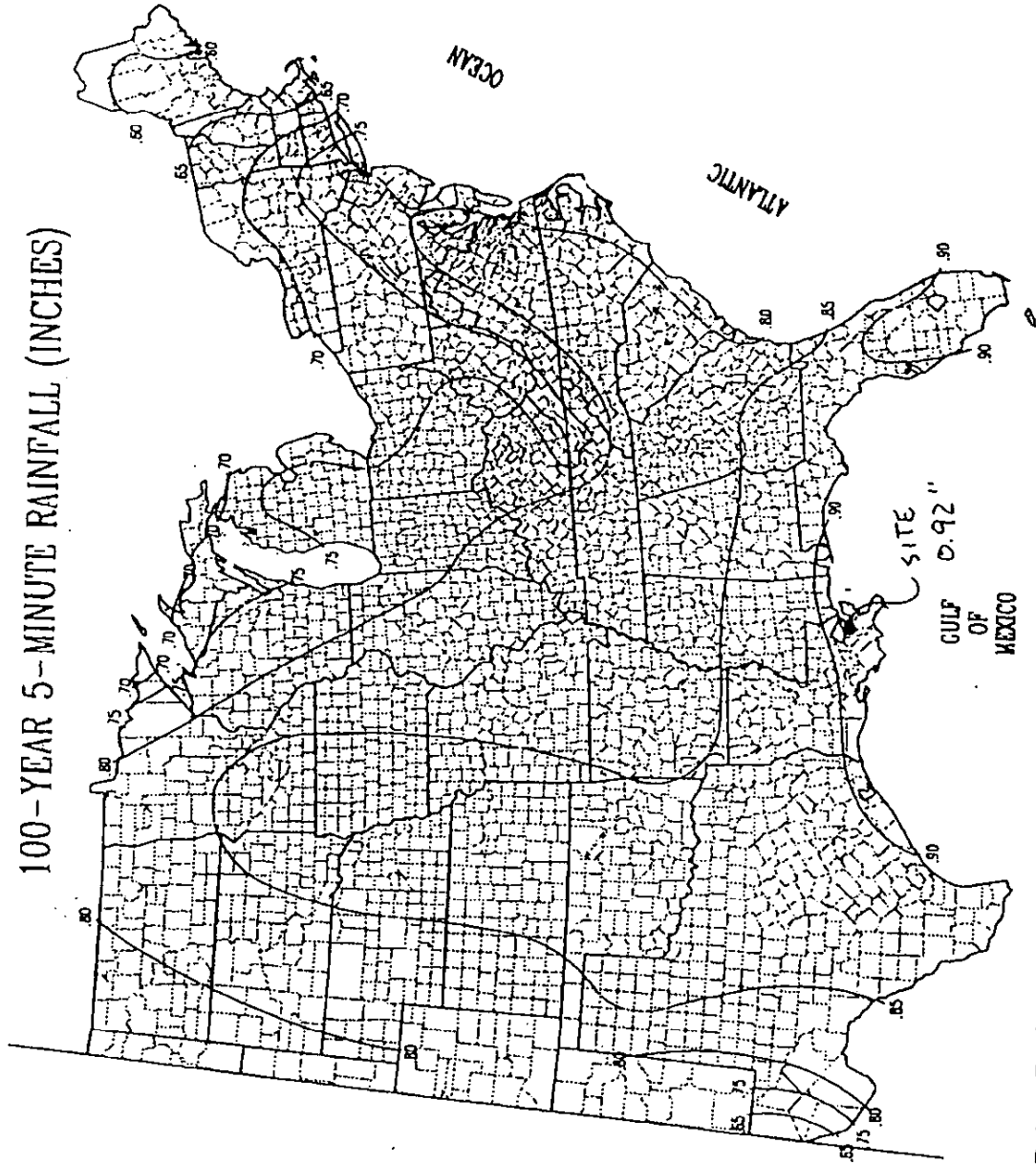
2-YEAR 15-MINUTE RAINFALL (INCHES)



2-YEAR 60-MINUTE RAINFALL (INCHES)

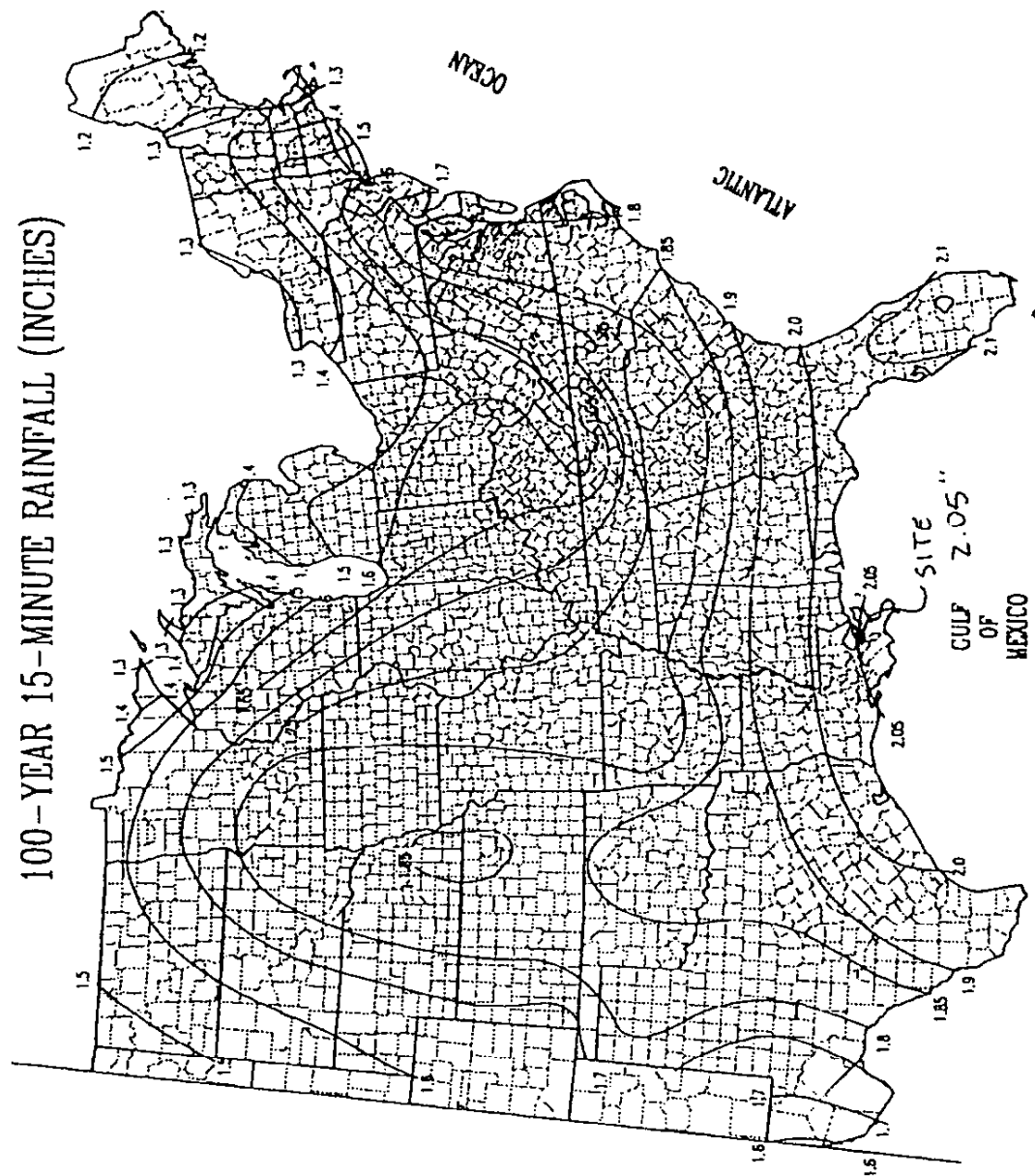


100-YEAR 5-MINUTE RAINFALL (INCHES)



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100-YEAR 15-MINUTE RAINFALL (INCHES)



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25-YEAR 2-HOUR RAINFALL (INCHES)

ATLANTIC OCEAN

GULF OF MEXICO

MEXICO

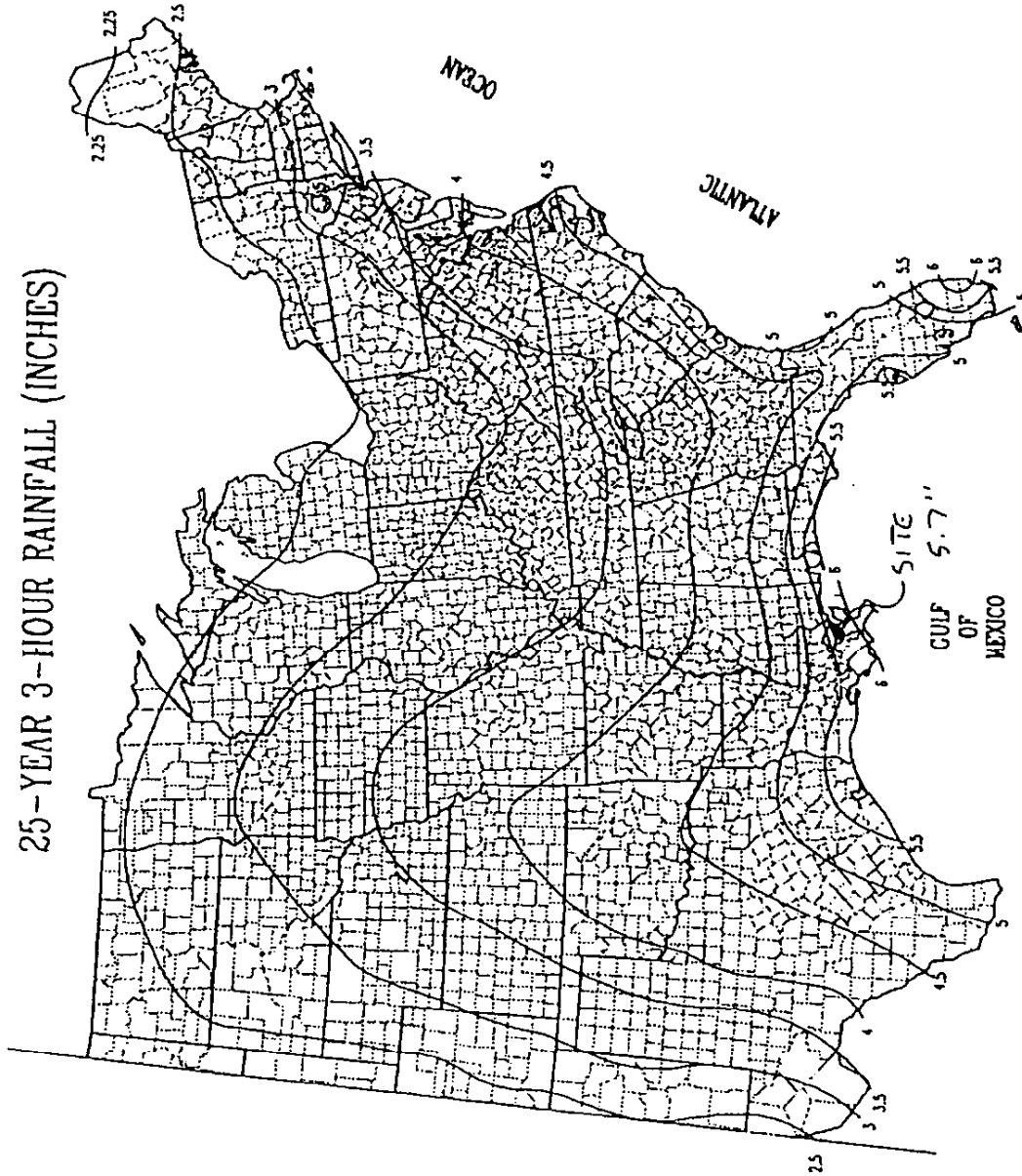
SITE

5.0"

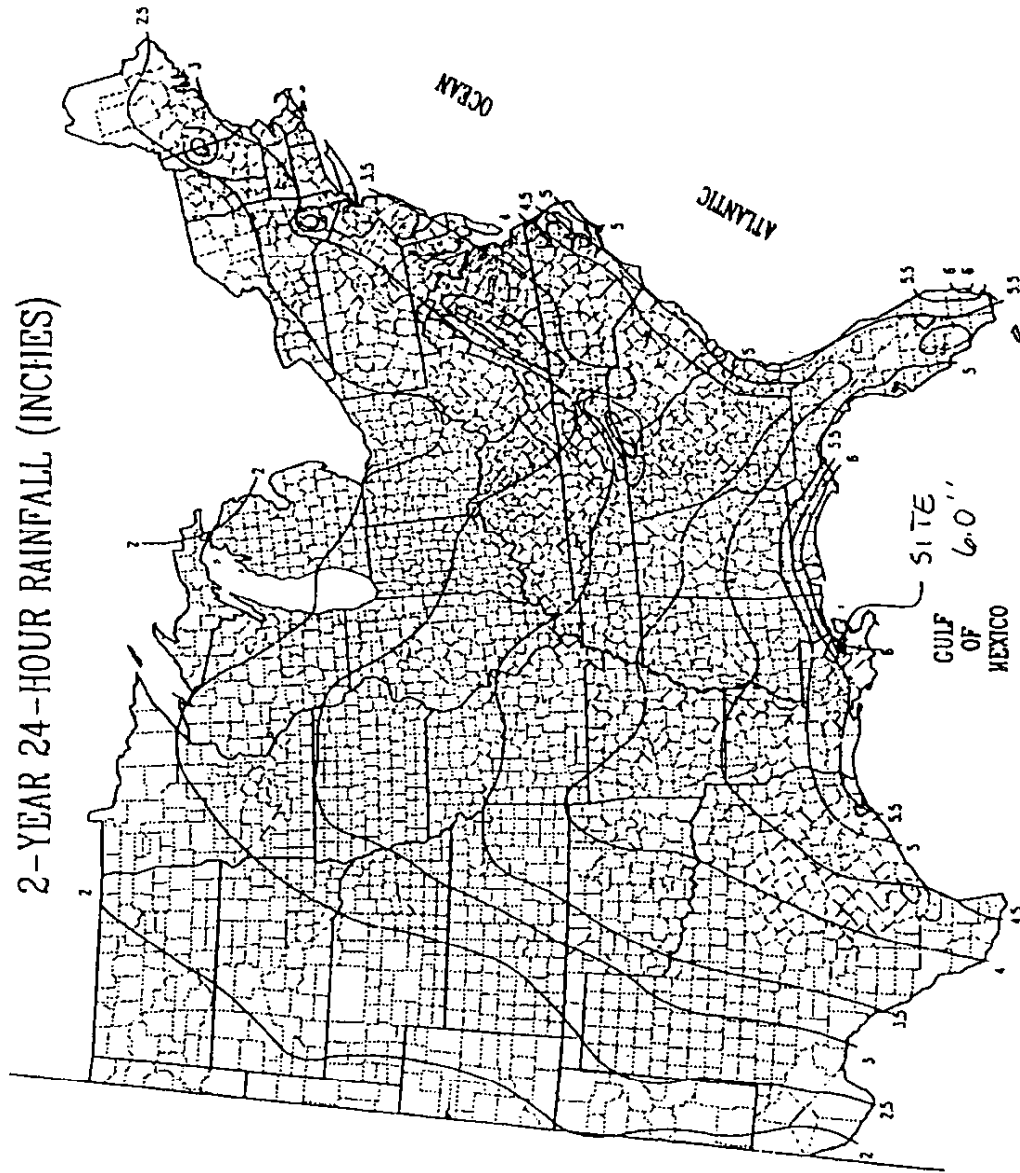


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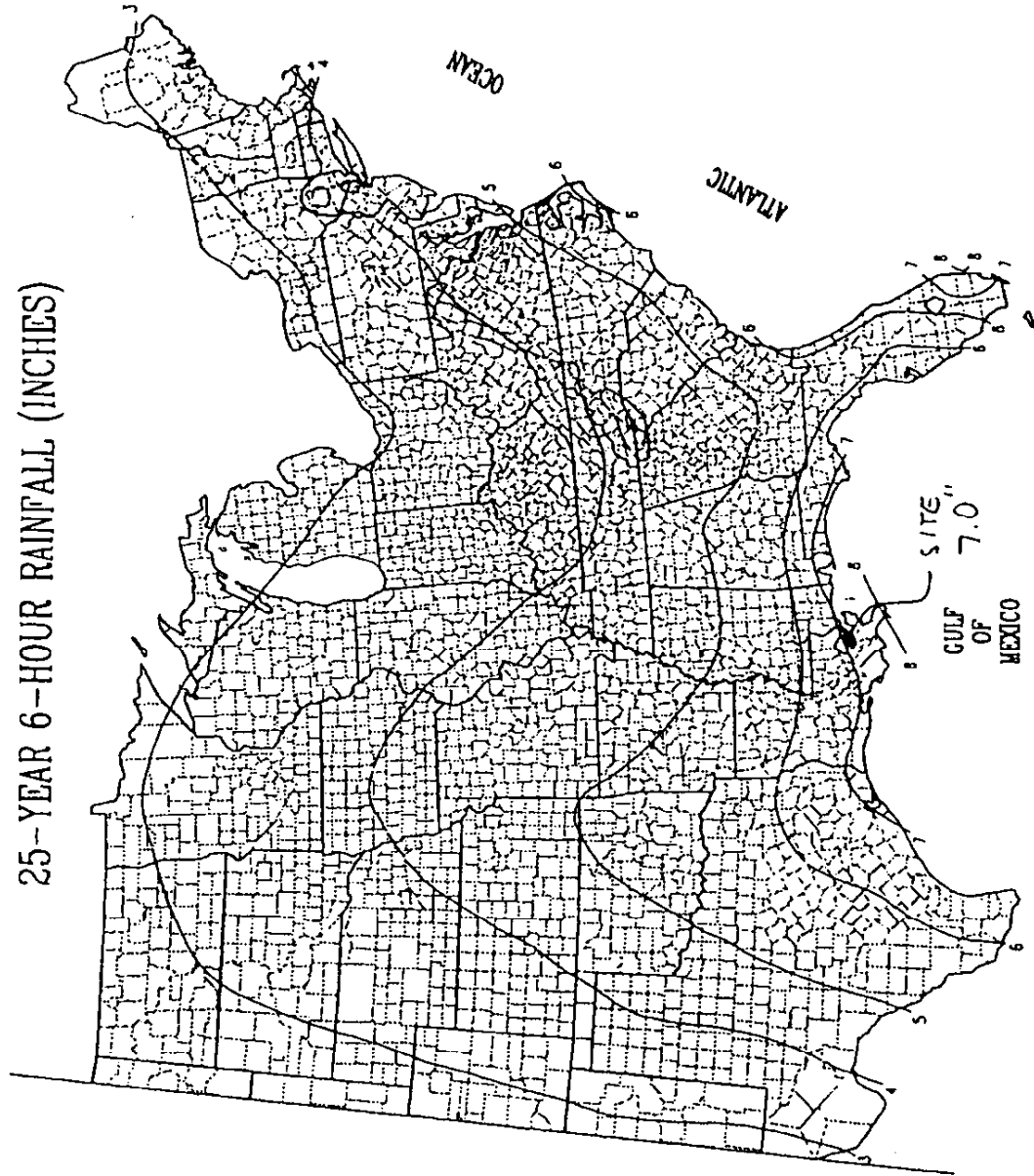
25-YEAR 3-HOUR RAINFALL (INCHES)



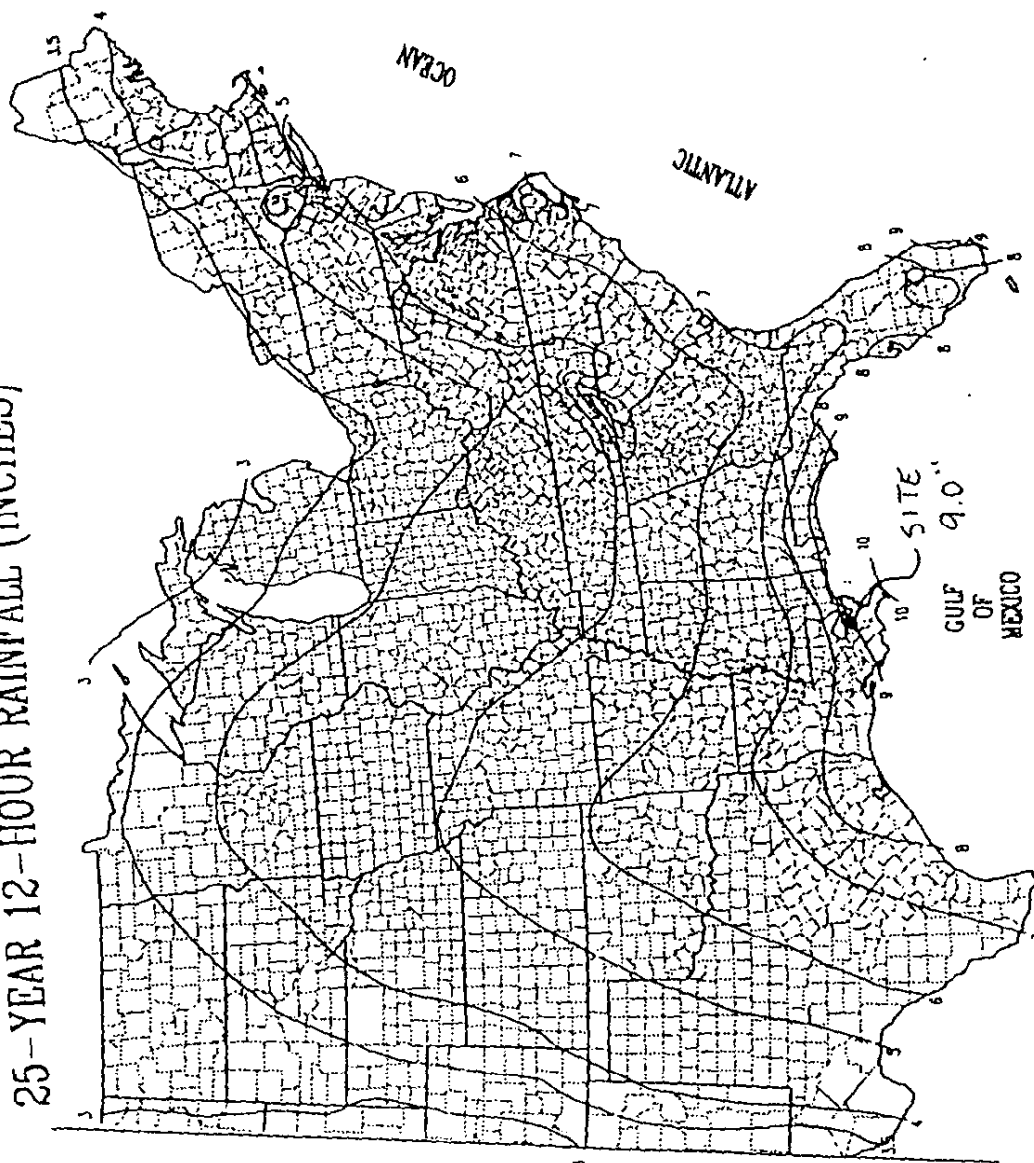
2-YEAR 24-HOUR RAINFALL (INCHES)



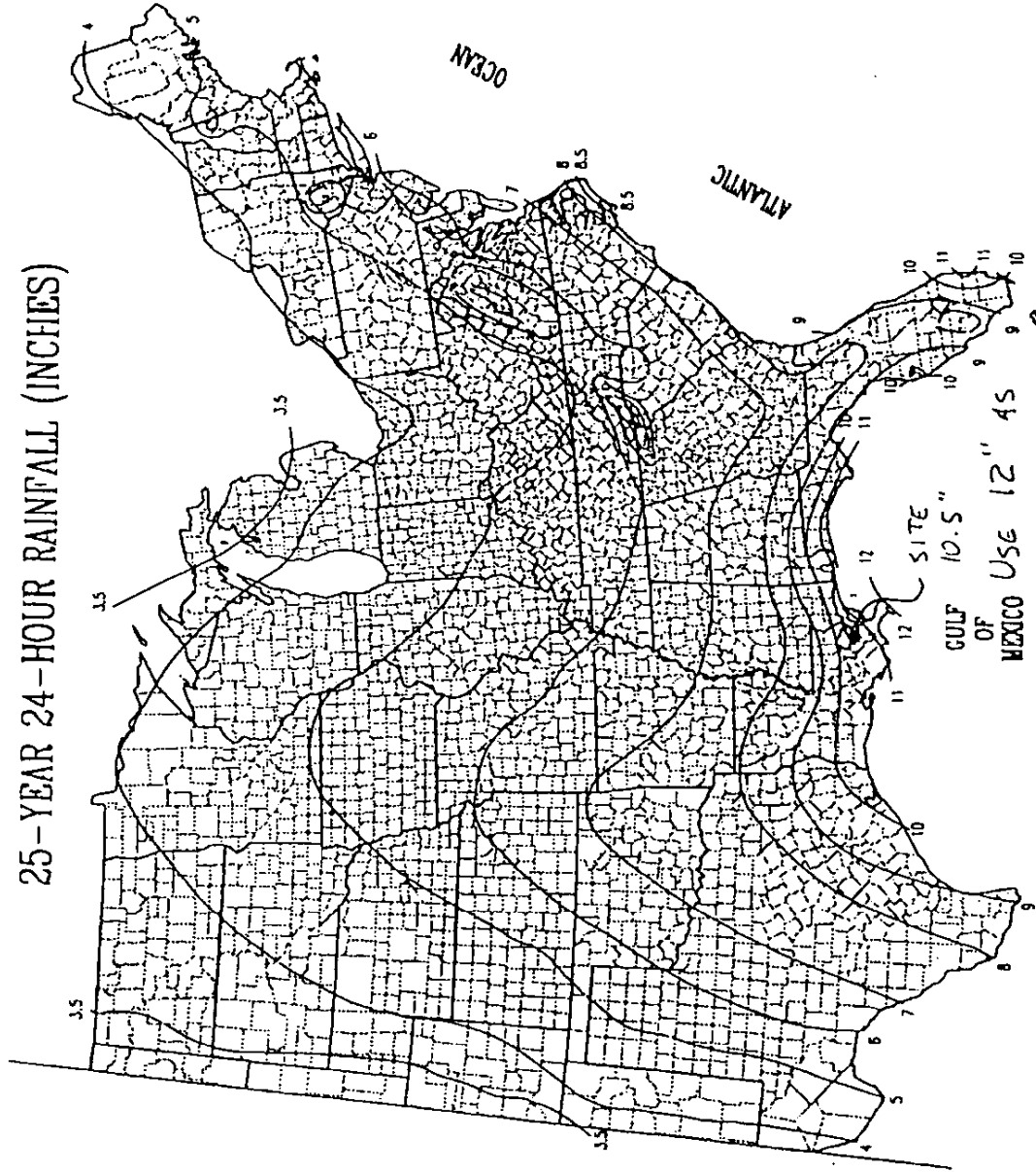
25-YEAR 6-HOUR RAINFALL (INCHES)



25-YEAR 12-HOUR RAINFALL (INCHES)



25-YEAR 24-HOUR RAINFALL (INCHES)



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Table 3.20 Coefficient a for Eq. (3.48)^a

Surface	a
Overland flow	
Forest with heavy ground litter	2.5
Hay; meadow	2.5
Trash fallow; minimum tillage	3.1
Contour; strip cropped	3.1
Woodland	3.1
Short grass	7.0
Straight row cultivation	8.6
Bare; untilled	10.1
Paved	20.3
Shallow concentrated flow	
Alluvial fans	10.1
Grassed waterways	16.1
Small upland gullies	20.3

^aResults in fps; multiply by 0.305 to get m/sec.Table 3.21 Manning's n for Travel Time Computations for Flow over Plane Surfaces (Soil Conservation Service, 1986)

Surface description	n^a
Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils	
Residue cover $\leq 20\%$	0.06
Residue cover $> 20\%$	0.17
Grass	
Short grass prairie	0.15
Dense grasses ^b	0.24
Bermudagrass	0.41
Range (natural)	0.13
Woods ^c	
Light underbrush	0.40
Dense underbrush	0.80

^aThe n values are a composite of information compiled by Engman (1986).^bIncludes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.^cWhen selecting n , consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

travel time for sheet flow over plane surfaces based on Manning's equation and a kinematic approximation to the flow equations. The equation is for flow lengths of less than 300 ft. The friction value or Manning's n is an effective roughness coefficient that includes the effect of raindrop impact; drag over plane surfaces;

obstacles such as litter, crop residue, ridges, and rocks; and the erosion and transport of sediment. These n values are for very shallow flow depths of about 0.1 ft or so. Table 3.21 gives Manning's n values for these conditions. The relationship for travel time is

$$T_t = \frac{0.007(nL)^{0.8}}{P_2^{0.5}S^{0.4}}, \quad (3.50)$$

where P_2 is the 2-year, 24-hr rainfall in inches and the other terms are as defined for Eq. (3.49). This relationship is based on shallow, steady, uniform flow; a constant rainfall excess intensity; and minor effects from infiltration.

In urban areas, the travel time may have to be based on a travel time to a storm drain inlet plus the travel time through the storm drain itself. Inlet travel time can generally be computed as the sum of overland flow and shallow channel flow travel times. Flow in storm drains would be considered as open channel flow with the storm drain pipe flowing full. Often large storms produce runoff rates that exceed the capacity of the storm drains and some of the runoff bypasses the drains in the form of concentrated surface flow as open channel flow. Such flow should be considered in computing the time of concentration.

Undersized culverts and bridge openings can cause ponding of flow and a reduction in the average flow velocity. For small ponds and situations where water is passing through the pond with little or no storage build up, the actual travel time through the pond may be very small. If significant storage results, the travel time is lengthened over that for normal channel flow, and flow routing as discussed in Chapter 6 must be used.

Flow velocity for open channels can be estimated from Manning's equation, which is treated in detail in Chapter 4.

Other methods are available in the form of empirical equations for estimating t_c . One such relationship that is widely used but based on limited data is expressed by Kirpich (1940)

$$t_c = 0.0078L^{0.77}(L/H)^{0.385}, \quad (3.51)$$

where t_c is in minutes, L is the maximum length of flow in feet, and H is the difference in elevation in feet between the outlet of the watershed and the hydraulically most remote point in the watershed. Obviously, Eq. (3.51) does not consider flow resistance in the form of overland flow and channel roughness.

Several methods for estimating the lag time of a watershed are available. One simple method for lag

DESIGN HYDROLOGY AND SEDIMENTOLOG) FOR SMALL CATCHMENTS"

An Irish engineer named Manning found that the equation

$$v = KR^{2/3}S^{1/2}$$

fit experimental data quite nicely. This equation is known as Manning's equation and differs from Chezy's equation only in the exponent on R . So that the factor related to the channel roughness would increase as roughness increased, Manning's equation is generally written as

$$v = (1/n)R^{2/3}S^{1/2}$$

in the metric system with v in meters per second and R in meters. The coefficient n is known as Manning's n . In the English system of units, Manning's equation is

$$v = \frac{1.49}{n}R^{2/3}S^{1/2}, \quad (4.23)$$

where v is in fps, R is in feet, and S is in feet per foot. Tables of Manning's n are widely available. Table 4.1 is such a table taken from several sources, drawing heavily on Schwab *et al.* (1966, 1971). Manning's n is influenced by many factors, including the physical roughness of the channel surface, the irregularity of the channel cross section, channel alignment and bends, vegetation, silting and scouring, and obstruction within the channel. Chow (1959) displays some photographs of typical channels and the associated values for Manning's n .

Figure 4.9 contains some useful relationships for calculating the hydraulic properties of A , P , R , and top width, T , for three common channels. For natural channels, these properties are best determined from measurements based on the actual cross sections of the channel.

Table 4.1 Typical Values for Manning's n

Type and description of conduits	n Values*			Type and description of conduits	n Values*		
	Min.	Design	Max.		Min.	Design	Max.
<i>Channels, lined</i>				<i>Natural Streams</i>			
Asphaltic concrete, machine placed		0.014		(a) Clean, straight bank, full stage, no rills or deep pools	0.025		0.033
Asphalt, exposed prefabricated		0.015		(b) Same as (a) but some weeds and stones	0.030		0.040
Concrete	0.012	0.015	0.018	(c) Winding, some pools and shoals, clean	0.035		0.050
Concrete, rubble	0.016		0.029	(d) Same as (c), lower stages, more ineffective slopes and sections	0.040		0.055
Metal, smooth (flumes)	0.011		0.015	(e) Same as (c), some weeds and stones	0.033		0.045
Metal, corrugated	0.021	0.024	0.026	(f) Same as (d), stony sections	0.045		0.060
Plastic	0.012		0.014	(g) Sluggish river reaches, rather weedy or with very deep pools	0.050		0.080
Shotcrete	0.016		0.017	(h) Very weedy reaches	0.075		0.150
Wood, planed (flumes)	0.009	0.012	0.016				
Wood, unplanned (flumes)	0.011	0.013	0.015				
<i>Channels, earth</i>				<i>Pipe</i>			
Earth bottom, rubble sides	0.028	0.032	0.035	Asbestos cement		0.009	
Drainage ditches, large, no vegetation				Cast iron, coated	0.011	0.013	0.014
(a) < 2.5 hydraulic radius	0.040		0.045	Cast iron, uncoated	0.012		0.015
(b) 2.5-4.0 hydraulic radius	0.035		0.040	Clay or concrete drain tile (4-12 in.)	0.010	0.0108	0.020
(c) 4.0-5.0 hydraulic radius	0.030		0.035	Concrete	0.010	0.014	0.017
(d) > 5.0 hydraulic radius	0.025		0.030	Metal, corrugated	0.021	0.025	0.0235
Small drainage ditches	0.035	0.040	0.040	Steel, riveted and spiral	0.013	0.016	0.017
Stony bed, weeds on bank	0.025	0.035	0.040	Vitrified sewer pipe	0.010	0.014	0.017
Straight and uniform	0.017	0.0225	0.025	Wood stave	0.010	0.013	
Winding, sluggish	0.0225	0.025	0.030	Wrought iron, black	0.012		0.015
				Wrought iron, galvanized	0.013	0.016	0.017
<i>Channels, vegetated</i>							
(See subsequent discussion)							

*Selected from numerous sources.

Table 2-2a.—Runoff curve numbers for urban areas¹

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area ²	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.):					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ³ ...		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) ⁴		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

¹Average runoff condition, and $I_a = 0.25$.²The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.³CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.⁴Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.⁵Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

4. **Total Travel Time:** Add the travel times for the individual pipe segments to obtain the travel time for the overall storm sewer reach.

Travel through a **lake or reservoir** is assumed to occur at the wave velocity in the body of water:

$$V_w = \sqrt{g \times D_m} \quad 6.42$$

In which:

V_w = wave velocity through reservoir (feet per second)

g = acceleration of gravity (32.2 feet per second per second)

D_m = mean depth of reservoir (feet)

Therefore, the travel time through a lake or reservoir may be computed using the following equation:

$$T_r = \frac{L}{3600V_w} \quad 6.43$$

T_r = travel time through reservoir (hours)

L = length of reservoir (feet)

V_w = wave velocity through reservoir (feet per second)

The time involved with passage through spillway storage and the reservoir outlet must be added to the travel time across the reservoir to account for the total time required for flow to pass through the reservoir.

W.S. Kerby (1959) developed an equation for computing time of concentration (t_c) for overland flow:

Kerby Method of Estimating t_c for Overland Flow

$$t_c = \left(\frac{0.67nL_o}{\sqrt{S_o}} \right)^{0.467} \quad 6.44$$

in which:

t_c = time of concentration in minutes

S_o = overland slope in feet per foot

n = overland roughness coefficient

L_o = length of overland flow in feet

Kerby's equation is recommended for overland distances not exceeding about 100 to 150 meters (330 to 490 feet).

Recommended values of the overland roughness coefficient, n , are presented in Table 6.5.

Surface	n
Smooth, impervious surface	0.02
Smooth, packed bare soil	0.10

TABLE 6.5 Values of Roughness Coefficient, N , for Kerby Equation

ATTACHMENT 2

SECTION IV - ENVIRONMENTAL IMPACT

There is no requirement that the information furnished in response to this questionnaire be certified by a professional engineer or other expert. Simple "yes" or "no" answers will not be accepted. A measured response should be given for each question posed, taking into consideration appropriate factors such as: the environmental sensitivity of the area, both for the proposed site and alternative sites; impacts on the economy of the area, both favorable and unfavorable; availability of raw materials, fuels and transportation and the impact of potential sites on their availability and economics; relationship of the facility to other facilities, either within or independent of the company, and the effects of location on these relationships; and other factors which may be appropriate on a case-by-case basis. (Attach any additional pages needed.)

- A. Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

See Section IV A Response.

- B. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweigh the former?

See Section IV B Response.

- C. Are there alternative projects, which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

See Section IV C Response.

- D. Are there alternative sites, which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

See Section IV D Response.

- E. Are there mitigating measures, which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

See Section IV Response.

SECTION IV - ENVIRONMENTAL IMPACT RESPONSE

- A. **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?**

RESPONSE: All requirements pertaining to this type of facility, as set forth in the LAC, have been met. The area is well suited for a Type III C&D debris landfill; since the proposed landfill will be constructed over an existing previously "closed" landfill. In addition, the area remains sparsely populated and the naturally occurring soils underlying the site are comprised mainly of fat and silty clays. The perimeter of the facility will be fenced and gates will control access to the property. The gates will be locked during non-operating hours. Since the site is to be built over a closed landfill site, issues related to sensitive receptors such as wetlands, and/or cultural/historical sites within close proximity of the facility were previously addressed. Only Type III C&D debris, wood waste, and exempt waste will be accepted at this facility. The receipt of hazardous waste will be strictly prohibited and prevented. The following media of the environment will be affected by the facility:

AIR: Minor amounts of dust and noise will be generated due to the nature of the facility. However, these problems will only occur during normal operating hours (maximum operating hours are 6:00 a.m. to 7:00 p.m., Monday through Sunday). All-weather roads lined will eliminate the majority of the dust that might be generated. In addition, the facility is located in the center of a 198-acre tract of land therefore the dust is unlikely to leave this property. Because only C&D debris will be disposed at the facility, no undesirable odors will be generated. Likewise, C&D waste in general contains minimum amounts of dust containing materials that in turn minimizes dust emissions from the wastes. Most of the anticipated dust emissions from the facility will be the results of traffic to and from the site, and the application of the interim and final covers. Furthermore, the site is located in a sparsely populated area.

WATER: There are no existing or planned bodies of surface waters (i.e., ditches, ponds, etc.) that have the potential to come into contact with the C&D debris. Since the landfill will be constructed above the existing ground surface for the site and the surrounding area, any potential storm water will flow away from the facility and so there is no concern for contamination of surface waters after closure of the proposed landfill. During operation of the proposed landfill, storm water will be routed away from the fill areas of the landfill (working area) by the perimeter ditches. Only storm water falling directly into the working area will have the potential for storm water contamination. This storm water will be collected and pumped into the perimeter ditches for discharge off-site, a permit for this intermittent discharge will be submitted to the LDEQ.

The potential for elevated total organic carbon (TOC) levels in ground water could exist, on a theoretical basis, if leaching into the ground water occurs because of leaks in the clay liner. However, the facility will be constructed over a pre-existing landfill and any leaching from the proposed landfill would also have to transverse the vertical limits of the "closed" landfill before leaching into the in-situ soils underlying the site.

Since as previously discussed, the majority of these in-situ soils are fat or silty clays, these soils should be expected to provide reasonable protection for the ground water and the ground water should not be affected by the proposed landfill.

SOIL: Soils in contact with the C&D debris may experience TOC levels that are higher than normal. Another negative potential would be basic litter during the life of the landfill. However, litter will be policed by landfill personnel and picked up and properly disposed of on a daily basis. In addition, to control any potential blowing litter due to high winds, movable hurricane fencing will be maintained (when necessary) around the working area (fill area) that has not yet undergone interim cover.

FLORA/FAUNA: The landfill will be constructed within the footprint of a previously "closed" landfill that has undergone final cover and closure as approved by the LDEQ. As such, no "virgin" flora/fauna will be impacted by the proposed landfill operations. Currently, the existing prairie grasses that were planted as erosion protection for the final cover of the previously "closed" landfill will be impacted by proposed landfill operations. Upon completion to final contours for the proposed landfill, these areas will be re-seeded with native grasses to return the area to a more natural setting. Fauna is not expected to be affected.

In the future, after closure of the landfill, the property will have a limited/restricted use (such as recreational or pasture land). However, this site is already restricted in its use due to the existing previously "closed" landfill underlying the area. The proposed landfill will actually aid the environment by providing a more beneficial use for this existing property; as well as, eliminate the need to impact other "virgin" areas by siting a new landfill at another location. The proposed landfill would restore the inherent value of the property and once again enable productive use of this land that would otherwise remain untapped and restricted. According to the Master Schedule of Implementation/Closure Plan (included in Attachment 10), the site will be returned to limited/restricted use approximately 13.5 years after permit issuance. However, it should be noted that this is only an estimate since the actual time will be dependent on the actual acceptance rate of the facility during operation.

- B. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweigh the former?**

RESPONSE: The facility should have a positive impact by allowing the public a safe, regulated location to discard construction debris rather than contributing to illegal dumping along the roadside. In addition, in the event that a natural disaster such as a hurricane should occur, the facility will provide access for a quick cleanup in the area, which is beneficial to the community and the environment. The facility's location in the east side of New Orleans and southeast part of Orleans Parish allows convenient access to a C&D Landfill

in an area that has few alternatives. The facility and its location will decrease air emissions by reducing travel time to an alternate site.

Another benefit is the fact, that the facility will be located on an existing property owned or controlled by the City of New Orleans and, therefore, eliminate the economic expense of purchase additional property of use as a landfill. The facility will also create jobs for local residents.

Possible environmental impacts deriving from the proposed site are minimal. The facility is not expected to become a societal nuisance due to the sparse population in the vicinity of the landfill. Traffic in and out of the facility should not interrupt routine traffic flow or affect the boarding or exiting of school buses in the area.

The site is well suited for a Type III facility due to its natural silty clays beneath the proposed fill area, along with the extreme depth to the first water bearing zone. Minor potential for surface water coming in contact with the construction debris during unexpected thunderstorms could produce elevated TOC levels within the fill area. However, as proposed in the PA, the fill area will be kept small and interim cover will take place at least every 30 days. In the event that storm water does come in contact with the debris, the amount will be negligible due to the small areas in which fill is applied. The storm water that does come in contact with debris will be contained within a levee maintained around the fill area. The contact water will be pumped into the perimeter ditches for off-site discharge under a Storm Water Permit.

Another potential environmental impact is the possibility for minor pieces of debris to fall from the transportation trucks in route to the facility. However, as required by state regulations for transporters, the majority of the transportation vehicles, i.e., trucks and trailers, will be equipped with covers to prevent this. Truck traffic could increase dust in the area. Based upon the facility's past operations, the amount of truck traffic at the facility is dependant on the economy and weather conditions. The facility experiences seasonal fluctuations. For example, winter months experience less construction work than summer months. However, based on past operations, it is estimated that the facility will average 272 waste bearing vehicles per day. Based on this traffic load, the facility should have no adverse affects on the roads in the vicinity of the Gentilly Landfill. The majority of the truck routes leading to the facility are blacktop or concrete.

The proposed landfill will actually aid the environment by providing a more beneficial use for this existing property; as well as, eliminate the need to impact other "virgin" areas by siting a new landfill at another location. The proposed landfill would restore the inherent value of the current property and once again enable productive use of this land that would otherwise remain untapped and restricted. Locating the proposed landfill at another location would introduce additional costs both economic and environmental to this project. These additional costs would include monetary expenses (land purchases, etc.) and environmental (impact to additional areas) costs associated with developing another site as a landfill location.

Based on the above-mentioned Cost/Benefit Analysis, it is obvious that the benefits to the community and the environment outweigh the environmental costs.

- C. **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing nonenvironmental benefits?**

RESPONSE: The Orleans Parish is fairly developed and the remaining open areas available for landfills in the parish are located on its eastern side. However, as is depicted in a 1994 aerial photograph of the site and the USGS 7.5 minute topographic map, existing industry and development or drainage features such as rivers, canals, and wetlands consume the remaining areas. The City of New Orleans does not operate any other Type III landfills therefore this project is practical and beneficial to the community. This project will provide an accessible, legal, economical, and safe facility to discard C&D debris in the New Orleans and surrounding areas. Other projects considered were not as practical, economical, beneficial, or as in demand as a C&D debris landfill. Since the facility will be constructed over a pre-existing landfill that had been in operation for several years and was already under LDEQ supervision, the project and location were ideal from both a regulatory and environmental standpoint. In addition, because of the sparse residential properties in the area, the site is well suited for Type III disposal activities.

- D. **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing nonenvironmental benefits?**

RESPONSE: There is no alternative site that would provide more protection to the environment than the Gentilly Landfill site, without curtailing non-environmental benefits. In addition, the "no action" alternative would result in greater impact to the environment, than not constructing the proposed Type III (C&D) Landfill over the existing closed landfill site.

Consideration of alternative sites may be viewed as less important in the perspective of an existing landfill site. The environmental impacts associated with siting a new facility are much greater than those resulting from the construction of a C&D landfill over a closed landfill site. However, the following analysis of potential alternative sites is provided that demonstrates that there are no alternative sites that would provide greater protection to the environment than the proposed Gentilly Landfill site.

In determining that the Gentilly Landfill site is the most favorable location, the City considered a number of factors as follows:

- Remote location/lack of populated areas;
- Consistent with land use;
- Proximity to sensitive environmental areas such as wetlands, recreational areas, historic or cultural areas;
- Availability of transportation infrastructure; and

- Relative environmental impact (existing landfill versus location of new facility).

In reviewing the potential alternative sites the City reviewed existing reports on the development of landfills in Orleans Parish. The City reviewed the 1992 *City of New Orleans Landfill Siting Project Report*, the findings of the 1994 Mayoral Task Force on Solid Waste, and the 2000 City of New Orleans Planning Commission Conditional Use Permit Amendment Request to permit a C&D Landfill.

In 1991 through 1992, the City of New Orleans conducted a comprehensive Landfill Siting Study. A copy of the *City of New Orleans Landfill Siting Project Report - June 1992* is enclosed as Attachment 17 to this Section. The purpose of the project was to identify the best site within Orleans Parish for the development of a City-owned solid waste management facility.

As part of the landfill siting process, a Public Advisory Committee (PAC) was formed, and included citizens, environmentalist, and business and technical leaders of the community. The PAC responsibility was to ensure that the public concerns were addressed. The approach used for public participation was based on the United States Environmental Protection Agency (USEPA) document, sites for *Our Solid Waste, a Guidebook for Effective Public Involvement*. The PAC was an integral part of the siting process, convening monthly for 9 months to advise and participate in the site selection process.

The approach used for this siting study was to systematically eliminate portions of Orleans Parish that did not meet various criteria. Various negative criteria were placed on a series of overlapping maps, and the areas remaining were identified as potential site areas for further investigation.

The decision-making process commenced with Orleans Parish land area as a whole; and by a process of elimination of negative sites, arrived at a small group of sites for evaluation, comparison, ranking, and final recommendation. The Landfill Siting criteria was developed and finalized with input from the PAC.

The landfill siting process employed three levels of evaluation that systematically eliminated areas from further consideration. Initially, seven potential sites were identified within Orleans Parish. Through the multi-level screening process, five sites were eliminated and the PAC forwarded two sites, Sites E and F, to the City Administration for further review. The two possible sites identified for further evaluation were located just south of the Intracoastal Waterway, and north of the St. Bernard Parish line. Louisiana Highway 47 (Paris Road) separated the two sites. The Gentilly Landfill site was not evaluated during the siting process, since the site was under closure.

On May 31, 1994, the Mayoral Task Force on Solid Waste was created by Executive Order with the purpose of re-evaluating the solid waste disposal options for the City of New Orleans. The mission of the Task Force was as follows:

- Review the Landfill Siting Study of the previous administration; Re-evaluated the conclusion and recommendations of the prior Landfill Site Study; and

- Investigate and evaluate all appropriate neighborhood and fiscal concerns, as well as, other regulatory issues required for permitting of a landfill site.

In August 1994, the Task Force completed their review of the landfill siting process, and determined that the City should investigate alternative landfill sites outside of Orleans Parish for the long-term disposal of solid waste.

In 2000, a request to permit a C&D Landfill was presented to the City of New Orleans Planning Commission. This proposed site is located at 16600 Chef Menteur Highway in the vicinity of Site C, which was reviewed in the *City of New Orleans Landfill Siting Study*. During the Landfill Siting Study, Site C was eliminated from further consideration because the site was located within 1,000 ft of an environmentally sensitive area, Bayou Sauvage National Wildlife Management Refuge, adjacent to commercial development and near residential areas. The surrounding areas to Site C are zoned residential and light industrial. The City Planning Commission for the proposed site at 16600 Chef Menteur Highway identified similar considerations.

Based on the review of the potential landfill sites in Orleans Parish, it is determined that the Gentilly Landfill site is the most favorable location for the development of a Type III (C&D) Landfill. The Gentilly Landfill site is in a remote relocation, and located in a heavy industrial area, and adjacent on the east and west sides by abandoned C&D landfill sites and the Gulf Intracoastal Waterway on the south. This surrounding area along Almonaster Boulevard is undeveloped and heavily wooded with some industrial development. There are no known sensitive environmental areas such as wetlands, recreational areas, historic, or cultural areas within 1,000 ft of the site.

The site is located on Almonaster Boulevard, which is a major roadway. The proposed Gentilly Landfill Type III is intended to replace the AMID Type III C&D Landfill that is nearing its design capacity. The proposed Gentilly Landfill Type III is in close proximity (less than 3 miles) to the AMID Landfill, and will provide uninterrupted service to this waste stream. The truck traffic to the Gentilly Landfill site will use the same roadways, as the traffic to the AMID Landfill. Therefore, the impact to existing traffic patterns will be minimal.

The proposed Gentilly Landfill Type III also benefits the environment by maximizing the property use without providing an environmental impact by locating the landfill in an undeveloped area. The C&D waste will provide additional fill material, and allow for the development of final contours that will be more conducive to proper drainage of the landfill site than under the existing Closure Plan. The proposed Gentilly Landfill Type III provides a greater environmental benefit, than the existing closed Gentilly Landfill due to the configuration of the landfill that will lessen the potential environmental impact of the underlying closed landfill due to the design of the proposed Type III Landfill.

In addition, the City of New Orleans is under a Compliance Order for the closure of the Gentilly Landfill. The majority of the site has been closed. However, the City does not have sufficient funds to complete the closure and provide post-closure monitoring of the site in

accordance with the approved Closure Plan. The City proposes to develop a Type III (C&D) Landfill over the closed landfill. The proposed operation of the Type III Landfill will allow the City to generate revenues to properly close the remainder of the existing site and provide post-closure monitoring.

As determined by the Landfill Siting Study, the land available for development in Orleans Parish is located predominately in New Orleans East. New Orleans East is an area where a high portion of the land, if not all, would be considered wetlands by the current practices of the USEPA and USACE in their wetlands determination. The development of the closed landfill site into a C&D landfill will minimize impact to wetland areas.

There does not exist another site in Orleans Parish that would avoid the adverse environmental impacts or provide more protection to the environment than the Gentilly Landfill site, without curtailing non-environmental benefits. By using an existing landfill site the overall impacts to transportation, socioeconomic, and the environment will be minimized.

E. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing nonenvironmental benefits?

RESPONSE: The proposed facility will take in materials such as broken lumber, concrete, drywall material, etc. The facility will also accept trees, tree stumps, branches, and various types of storm debris and land-clearing debris. With the exception of trees, tree stumps, and branches, the materials being disposed offer very little possibilities for reuse. The trees, stumps, and branches could be converted to compost and mulch, but this is not an everyday occurrence and would not aid in protecting the environment. The proposed facility will recycle incoming refuse such as tires and white goods, which are not allowed to be disposed in the landfill. In the event that these materials are unknowingly allowed into the landfill, they will be separated and temporarily stored on-site until they are delivered or picked up by a recycling facility and shipped off-site to a landfill permitted to receive this type of waste.

According to the Louisiana Water Quality Regulations, LAC 33:IX.23.B, the following requirements shall apply to the signatory page in this application:

Subchapter B. Permit Application and Special LPDES Program Requirements

2333. Signatories to permit applications and reports

A. All permit applications shall be signed as follows:

1. For a corporation - by a responsible corporate officer. For the purpose of this Section responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

(b) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship - by a general partner or the proprietor, respectively; or

3. For a municipality, parish, State, Federal or other public agency - either a principal executive officer or ranking elected official. For the purposes of this Section a principal executive officer of a Federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by permits, and other information requested by the state administrative authority shall be signed by a person described in LAC 33:IX.2333.A, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in LAC 33:IX.2333.A.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as a position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The written authorization is submitted to the state administrative authority.

C. Changes to authorization. If an authorization under LAC 33:IX.2333.B is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of LAC 33:IX.2333.B must be submitted to the state administrative authority prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Any person signing any document under LAC 33:IX.2333.A or B shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

SIGNATORY AND AUTHORIZATION

Pursuant to the Water Quality Regulations (specifically LAC 33:IX.2333.A and B) which became effective October 20, 1995, the state permit application must be signed by a responsible individual as described in LAC 33:IX.2333.A and B and that person shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature

Name (Please Print)

Stephen F. Stumpf

Title

Managing Member

Date

September 11, 2003

Telephone

(504) 737-3205

CHECKLIST

To prevent any unnecessary delay in the processing of your application, please take a moment and check to be certain that the following items have been addressed and enclosed:

1. ALL blanks have been answered (NA if the question was not applicable).
2. All required maps and drawings are enclosed.
3. The appropriate person has signed the signatory page.

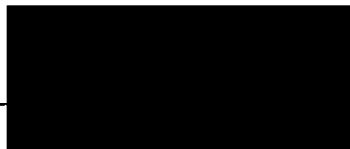
ANY APPLICATION THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. APPLICATION PROCESSING WILL NOT PROCEED UNTIL ALL REQUESTED INFORMATION HAS BEEN SUBMITTED.

SIGNATORY AND AUTHORIZATION

Pursuant to the Water Quality Regulations (specifically LAC 33:IX.2333.A and B) which became effective October 20, 1995, the state permit application must be signed by a responsible individual as described in LAC 33:IX.2333.A and B and that person shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature



Name (Please Print) Lynn Wiltz

Title Director, New Orleans Department of Sanitation

Date September 11, 2003

Telephone (504) 299-3670

CHECKLIST

To prevent any unnecessary delay in the processing of your application, please take a moment and check to be certain that the following items have been addressed and enclosed:

1. ALL blanks have been answered (NA if the question was not applicable).
2. All required maps and drawings are enclosed.
3. The appropriate person has signed the signatory page.

ANY APPLICATION THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. APPLICATION PROCESSING WILL NOT PROCEED UNTIL ALL REQUESTED INFORMATION HAS BEEN SUBMITTED.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Addendum to Permit Applications per LAC 33:I.1701

Introduction

This Addendum to Permit Applications provides information to the Permits Division which is used to comply with the requirements of LAC 33:I.1701 - Requirements for Obtaining a Permit. Authority to ask for this information is contained in the Louisiana Administrative Code, Title 33. Copies of this law are available from the Regulation Development Section of the Office of Environmental Assessment, or on the Internet at:

<http://www.deq.state.la.us/planning/regs/title33/index.htm>

Who Should Submit an Addendum to Permit Applications?

The Addendum to Permit Applications should be submitted for any permit application submitted for a new source and for all permit actions, including renewals and changes of ownership. Air permit modification requests are exempt from this requirement unless they include, or are limited to, a change of ownership.

What If I Previously Sent an Addendum to Permit Applications to DEQ?

You must submit this addendum with each permit application, as stated above. It is acceptable to submit a copy of a previously submitted form, if the original signature date is not more than twelve months old. Indicate the original submittal date and the permit number for which it was previously submitted. Please review the information to ensure that it is still correct.

What You Should Submit and What You Should Keep

Route the original and two photocopies to this agency. For Part 70 Air Permit applications, a copy should be submitted directly to EPA's Dallas office -- EPA Region 6 (6PD-R), 1445 Ross Avenue, Suite. 1200, Dallas TX 75202-2733.

Acceptable Answers

"NA" is not an acceptable answer. If a particular section does not apply to you, explain why. Please attach additional sheets for the required information.

General

Do not write information in the top or left side margin of this form as file folder bindings may cover the information.

Step-by-Step Instructions

1 Media Type

Indicate whether this is for a Solid Waste, Air, Water, Hazardous Waste or Radiation Licensing application.

2 Agency Interest Number

If blank, type or print the Agency Interest Number in the space provided at the top of each page (if known); otherwise, leave blank.

3 Indicate if Copy of Previously Submitted Form

Indicate whether or not this is a copy of a previously submitted form. If yes, indicate the original submittal date and the permit number for which it was previously submitted. You may not submit a copy which has an original signature date that is more than twelve months old.

4 Company Name, Parent Company, Plant Name and Location

If blank, type or print the name of the company, the name of its parent, the name of the plant, if any, the parish where the plant is located, and the closest town in the same parish as the facility. Check the appropriate box to indicate if the permittee is the owner or operator of the facility.

5 List of States With Similar Actions

Please provide a list of the states where you, as applicant, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying.

6 Outstanding Fees

Do you owe any outstanding fees or final penalties to the Department? If so, please explain.

7 Registration with Secretary of State

If your company is a corporation or a limited liability company, please provide proof of registration with the Secretary of State.

8 Responsible Official

Enter the name, address, and phone number of the responsible company official. Part 70 sources must meet the requirements of LAC 33.III.502 regarding the Responsible Official.

9 Certification by Responsible Official

An authorized company agent should sign and date the form confirming its accuracy and completeness.

Media Type (check one)


Hazardous Waste ☐ Air ☐
Solid Waste ☐ Water ☒
Radiation Licensing ☐

Agency Interest Number: _____

Is this a copy of a previously submitted form? Yes ☐ No ☐

If yes, indicate the original submittal date: _____

If yes, indicate the original permit number: _____

Department of Environmental Quality Permits Division P.O. Box 82135 Baton Rouge, LA 70884-2135 (225) 765-0219		Addendum to Permit Applications per LAC 33:1.1701		
Please Type Or Print	Company Name <div style="text-align: center;">City of New Orleans</div>	<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator	For Permits Division Use Only	
	Parent Company (if Company Name given above is a division)			
	Plant name (if any) <div style="text-align: center;">Gentilly Landfill "Type III"</div>			
	Nearest town <div style="text-align: center;">New Orleans, LA</div>	Parish where located <div style="text-align: center;">Orleans</div>		

Use attachments to provide the required information. "NA" is not an acceptable answer. If a particular section does not apply to you, explain why.

1. Please provide a list of the states where you, as applicant*, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying.

*This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.

2. Do you owe any outstanding fees or final penalties to the Department? No ☒ Yes ☐ If yes, please explain.


3. Is your company a corporation or limited liability company? No ☒ Yes ☐ If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State.

Certification:

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Addendum to the Permit Application, including all attachments thereto are true, accurate, and complete.

Responsible Official

Name	Ms. Lynn Wiltz
Title	Director
Company	City of New Orleans
Suite, mail drop, or division	Department of Sanitation
Street or P.O. Box	1340 Poydras St., Suite 750

City	New Orleans	State	LA	Zip	70112
Business phone					
Signature of					
Date					
	<div style="text-align: right;">11/11/03</div>				

The Department may require the submission of additional information if it deems such information necessary.

OUTFALL NO. 2

6. Is this facility located in a designated industrial area? Yes X No **SECTION II - DISCHARGE INFORMATION**

Complete Section II for each discharge outfall. Outfalls are discharge points. An external outfall is a discrete discharge point beyond which the waste stream receives no further mixing with other waste streams prior to discharging into a receiving water. An internal outfall is an outfall for a waste stream that combines with other waste stream(s) before discharging into an "external" outfall. Please provide your after-treatment test results in the units asked for on the application. For proposed facilities, estimates should be provided for any expected contaminants even though the facility is not in place yet.

A. Complete this section for **each** discharge outfall.

1. **Outfall Location.** Provide a description of the physical location for each outfall and coordinates to the nearest 15 seconds (provide additional pages if more than one outfall).

Outfall No. 2Latitude: 30 deg. 00 min. 33 sec. Longitude: 89 deg. 58 min. 33 sec.

2. If new discharge, when do you expect to begin discharging? 4th Quarter 2003

3. **Outfall Identification.** Provide: 1. A description of all operations contributing wastewater to the effluent for the outfall including process wastewater, sanitary wastewater, cooling water, and storm water runoff; 2. The average flow contributed by each operation; and 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

OUT-FALL No.	OPERATION(S) CONTRIBUTING FLOW		TREATMENT
	1. OPERATION (list)	2. AVERAGE FLOW (include units)	3. DESCRIPTION
2	Storm water from landfill surface	3,194.2 ft ³ /day	None
	Ancillary Structures	58.84 ft ³ /day	None

4. Except storm water, if any of the applicant's discharges are intermittent or seasonal, please complete the following table.

FREQUENCY (specify average)		FLOW			
Days per Week	Which Months per Year	Flow Rate (mgd)		Total Volume (specify with units)	
		long term average	daily maximum	long term average	Daily maximum
N/A	N/A	N/A	N/A	N/A	N/A

Storm water only will be discharged.

5. Treatment Methods. Please be specific for each outfall.

Storm water is the only discharge from the facility. No treatment will occur.

6. Disposal. List any solid or liquid waste disposal methods and facilities. Include a description of the ultimate disposal of any solid or fluid wastes that are disposed of other than by discharge.

No liquid waste will be disposed of at this facility. Construction/demolition/wood-waste (C&D) debris will enter the facility through the main entrance and be screened for non-acceptable materials at the guard gate. Acceptable waste will be taken to the landfill working area for disposal. Non-acceptable waste will be rejected immediately or stored in covered roll-off boxes to be disposed of off-site according to contents at least every seven days. Upon placement of the C&D waste, weekly, interim, and final cover soils will be placed over the waste in accordance with applicable regulations.

7. **Receiving Waters.** Indicate how the wastewater reaches state waters (named water bodies). This will usually be either "directly", by ☐ open ditch" (if it is a highway ditch, indicate the highway), or by "pipe". Please specifically name all of the minor water bodies that your wastewater will travel through on the way to a major water body. This information can be obtained from U.S.G.S. Quadrangle Maps. Include river mile of discharge point if available.

Wastewater Flows. CHECK ONE:

☐ directly; ☐ by open ditch; ☐ by pipe; ☐ by Almonaster Avenue (open ditch);
(specify)

into mile 10 of the Intracoastal Waterway; thence into the Mississippi River;

thence into Gulf of Mexico; thence into N/A
(name of stream, lake, marsh or underground horizon receiving the waste)

8. **Lab Analysis - All Dischargers:** Make additional copies as needed. Sampling and analytical protocols must conform to the requirements in LAC 33:IX.23 Subchapters B and V, and 40 CFR Part 136; when no analytical method is approved, the applicant may use any suitable method but must provide a description of the method. For storm water discharges, indicate date & duration of storm event sampled, total inches of precipitation, and number of hours since the end of the previous storm event which was greater than 0.1 inches.

For each outfall, this section must be completed for each pollutant unless the applicant demonstrates that a waiver for that pollutant is appropriate.

No lab analysis of storm water discharges has been performed since this is a proposed facility.

For Discharges of Landfill Wastewater (includes cell dewatering wastewater, vehicle wash water, and contaminated storm water) From a Construction/Demolition Debris and Woodwaste Landfill complete the table below. (Proposed facilities shall have up to two years from commencement of operations to complete and submit the information below. An estimate based on engineering calculations and/or knowledge may be submitted in the interim.):

OUTFALL NO. & DESCRIPTION: Outfall #2 Storm Water – No landfill wastewater will be discharged from this facility. Only storm water will be discharged. This section is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lbz/day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
BOD ₅				
COD				
TOC				
Oil and Grease				
Ammonia (as N)				
Alpha Terpineol				
Benzoic Acid				
Total Suspended Solids				
P-Cresol				
Toluene				
Total Zinc				
Total Copper				
Total Mercury				
Total Lead				
	Daily Maximum	Maximum 30-Day*	30-Day Low Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Washrack Wastewater, Maintenance and Repair Shop Floor Washdown complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #2 Storm Water - The Gentilly Landfill "Type III" does not contain a wash rack or maintenance and repair shop. This section is non-applicable.				
POLLUTANT	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb./day)	
	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
COD				
Oil and Grease				
Total Suspended Solids				
	Daily Maximum	Maximum 30-Day*	Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Sum		
Soap and/or Detergents (Amounts Used)				
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Uncontaminated Storm Water From Areas Outside of the Construction/Demolition Debris and Woodwaste Landfill Area complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #2 - Open Ditch, Storm Water.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lbs/day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
COD				
TOC				
Oil and Grease				
	Daily Maximum	Maximum 30-Day*	30-Day Low Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

- * Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Treated Sanitary Wastewater complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #2 Storm Water – No treated sanitary wastewater will be discharged. This item is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb./day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
BOD ₅				
Oil and Grease				
Total Suspended Solids				
Total Residual Chlorine (if chlorine is used)				
Fecal Coliform Colonies/100 ml				
	Daily Maximum	Max. 30-Day	30-Day Low Flow*	Method of Measure/ Estimate
Flow (GPD)				
	Min.	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

- * Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

10. **NEW SOURCE/DISCHARGERS DISCHARGING PROCESS WASTEWATER**
complete the following items a) and b):

- a) **ENGINEERING REPORT:** Are there any technical evaluations concerning your wastewater treatment system, including engineering reports or pilot plant studies?

There is no wastewater treatment system proposed for the site. Therefore,
this response is non-applicable.

- b) **SIMILAR OPERATIONS:** Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this facility with respect to processes, wastewater constituents, or wastewater treatment.

Crescent Acres Landfill - located approximately 1.14 miles south west of
the Gentilly Landfill "Type III".

- A. Were any of the analyses reported in Section II, Item A above performed by a contract lab or consulting firm? N/A If "yes", provide firm name and address, phone number, and pollutants analyzed.

No

- B. List pertinent physical and chemical properties (e.g., toxic components, taste and odor compounds, heavy metals, etc.) that may be associated with the discharge.

The Gentilly Landfill "Type III" will not discharge process wastewater.
Only clean storm water will be discharged.

- C. **Toxicity Data.** List any bioassay tests conducted on the effluent from the facility. Provide a summary of the test results.

No bioassay test have been performed since this is a proposed facility.

SECTION III - DIAGRAMS AND MAPS

- A. **Flow Diagram.** Attach a line drawing of the water flow through the facility with a water balance showing operations contributing wastewater to the effluent and treatment units. The water balance must show average and maximum flows at intake and discharge points and between units, including treatment units. If a water balance cannot be determined, the applicant may provide instead a pictorial description of the nature and amount of any sources of water and any collection and treatment measures.

See Appendix 1 for storm water drainage calculations.

- B. **Site Diagram.** Attach to this application a complete site diagram of the facility demonstrating how the wastewater flows through the facility into each clearly labeled discharge point (including all treatment points). Indicate storm water flow pattern on this map or provide additional maps if needed. Identify the location of the front gate of the facility.

See Figure 1 and Figure 2 located in Outfall No. 2, Attachment 2.

- C. **Topographic Map.** Attach to this application a topographic map (or other map if topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its discharge structures; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area. The wastewater pathway should be highlighted from the facility to the first named water body.

See Figure 3 located in Outfall No. 2, Attachment 2.

A U.S.G.S. 1:24,000 scale map (7.5' Quadrangle) would be appropriate for this item. Appropriate maps can be obtained from local government agencies such as DOTD or Office of Public Works. Private map companies can also supply these maps. If a map cannot be located through these sources, the U. S. Geological Survey can be contacted at the following address.

U. S. Geological Survey
Stennis Space Center
Bay St. Louis, MS 39529

Customer Services
(228)-688-3541

SECTION IV - ENVIRONMENTAL IMPACT

There is no requirement that the information furnished in response to this questionnaire be certified by a professional engineer or other expert. Simple "yes" or "no" answers will not be accepted. A measured response should be given for each question posed, taking into consideration appropriate factors such as: the environmental sensitivity of the area, both for the proposed site and alternative sites; impacts on the economy of the area, both favorable and unfavorable; availability of raw materials, fuels and transportation and the impact of potential sites on their availability and economics; relationship of the facility to other facilities, either within or independent of the company, and the effects of location on these relationships; and other factors which may be appropriate on a case-by-case basis. (Attach any additional pages needed.)

- A. Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

See Section IV A Response.

- B. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweigh the former?

See Section IV B Response.

- C. Are there alternative projects, which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

See Section IV C Response.

- D. Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

See Section IV D Response.

- E. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

See Section IV Response.

SECTION IV - ENVIRONMENTAL IMPACT RESPONSE

- A. **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?**

RESPONSE: All requirements pertaining to this type of facility, as set forth in the LAC, have been met. The area is well suited for a Type III C&D debris landfill; since the proposed landfill will be constructed over an existing previously "closed" landfill. In addition, the area remains sparsely populated and the naturally occurring soils underlying the site are comprised mainly of fat and silty clays. The perimeter of the facility will be fenced and gates will control access to the property. The gates will be locked during non-operating hours. Since the site is to be built over a closed landfill site, issues related to sensitive receptors such as wetlands, and/or cultural/historical sites within close proximity of the facility were previously addressed. Only Type III C&D debris, wood waste, and exempt waste will be accepted at this facility. The receipt of hazardous waste will be strictly prohibited and prevented. The following media of the environment will be affected by the facility:

AIR: Minor amounts of dust and noise will be generated due to the nature of the facility. However, these problems will only occur during normal operating hours (maximum operating hours are 6:00 a.m. to 7:00 p.m., Monday through Sunday). All-weather roads lined will eliminate the majority of the dust that might be generated. In addition, the facility is located in the center of a 198-acre tract of land therefore the dust is unlikely to leave this property. Because only C&D debris will be disposed at the facility, no undesirable odors will be generated. Likewise, C&D waste in general contains minimum amounts of dust containing materials that in turn minimizes dust emissions from the wastes. Most of the anticipated dust emissions from the facility will be the results of traffic to and from the site, and the application of the interim and final covers. Furthermore, the site is located in a sparsely populated area.

WATER: There are no existing or planned bodies of surface waters (i.e., ditches, ponds, etc.) that have the potential to come into contact with the C&D debris. Since the landfill will be constructed above the existing ground surface for the site and the surrounding area, any potential storm water will flow away from the facility and so there is no concern for contamination of surface waters after closure of the proposed landfill. During operation of the proposed landfill, storm water will be routed away from the fill areas of the landfill (working area) by the perimeter ditches. Only storm water falling directly into the working area will have the potential for storm water contamination. This storm water will be collected and pumped into the perimeter ditches for discharge off-site, a permit for this intermittent discharge will be submitted to the LDEQ.

The potential for elevated total organic carbon (TOC) levels in ground water could exist, on a theoretical basis, if leaching into the ground water occurs because of leaks in the clay liner. However, the facility will be constructed over a pre-existing landfill and any leaching from the proposed landfill would also have to transverse the vertical limits of the "closed" landfill before leaching into the in-situ soils underlying the site.

Since as previously discussed, the majority of these in-situ soils are fat or silty clays, these soils should be expected to provide reasonable protection for the ground water and the ground water should not be affected by the proposed landfill.

SOIL: Soils in contact with the C&D debris may experience TOC levels that are higher than normal. Another negative potential would be basic litter during the life of the landfill. However, litter will be policed by landfill personnel and picked up and properly disposed of on a daily basis. In addition, to control any potential blowing litter due to high winds, movable hurricane fencing will be maintained (when necessary) around the working area (fill area) that has not yet undergone interim cover.

FLORA/FAUNA: The landfill will be constructed within the footprint of a previously "closed" landfill that has undergone final cover and closure as approved by the LDEQ. As such, no "virgin" flora/fauna will be impacted by the proposed landfill operations. Currently, the existing prairie grasses that were planted as erosion protection for the final cover of the previously "closed" landfill will be impacted by proposed landfill operations. Upon completion to final contours for the proposed landfill, these areas will be re-seeded with native grasses to return the area to a more natural setting. Fauna is not expected to be affected.

In the future, after closure of the landfill, the property will have a limited/restricted use (such as recreational or pasture land). However, this site is already restricted in its use due to the existing previously "closed" landfill underlying the area. The proposed landfill will actually aid the environment by providing a more beneficial use for this existing property; as well as, eliminate the need to impact other "virgin" areas by siting a new landfill at another location. The proposed landfill would restore the inherent value of the property and once again enable productive use of this land that would otherwise remain untapped and restricted. According to the Master Schedule of Implementation/Closure Plan (included in Attachment 10), the site will be returned to limited/restricted use approximately 13.5 years after permit issuance. However, it should be noted that this is only an estimate since the actual time will be dependent on the actual acceptance rate of the facility during operation.

- B. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweigh the former?**

RESPONSE: The facility should have a positive impact by allowing the public a safe, regulated location to discard construction debris rather than contributing to illegal dumping along the roadside. In addition, in the event that a natural disaster such as a hurricane should occur, the facility will provide access for a quick cleanup in the area, which is beneficial to the community and the environment. The facility's location in the east side of New Orleans and southeast part of Orleans Parish allows convenient access to a C&D Landfill

in an area that has few alternatives. The facility and its location will decrease air emissions by reducing travel time to an alternate site.

Another benefit is the fact, that the facility will be located on an existing property owned or controlled by the City of New Orleans and, therefore, eliminate the economic expense of purchase additional property of use as a landfill. The facility will also create jobs for local residents.

Possible environmental impacts deriving from the proposed site are minimal. The facility is not expected to become a societal nuisance due to the sparse population in the vicinity of the landfill. Traffic in and out of the facility should not interrupt routine traffic flow or affect the boarding or exiting of school buses in the area.

The site is well suited for a Type III facility due to its natural silty clays beneath the proposed fill area, along with the extreme depth to the first water bearing zone. Minor potential for surface water coming in contact with the construction debris during unexpected thunderstorms could produce elevated TOC levels within the fill area. However, as proposed in the PA, the fill area will be kept small and interim cover will take place at least every 30 days. In the event that storm water does come in contact with the debris, the amount will be negligible due to the small areas in which fill is applied. The storm water that does come in contact with debris will be contained within a levee maintained around the fill area. The contact water will be pumped into the perimeter ditches for off-site discharge under a Storm Water Permit.

Another potential environmental impact is the possibility for minor pieces of debris to fall from the transportation trucks in route to the facility. However, as required by state regulations for transporters, the majority of the transportation vehicles, i.e., trucks and trailers, will be equipped with covers to prevent this. Truck traffic could increase dust in the area. Based upon the facility's past operations, the amount of truck traffic at the facility is dependant on the economy and weather conditions. The facility experiences seasonal fluctuations. For example, winter months experience less construction work than summer months. However, based on past operations, it is estimated that the facility will average 272 waste bearing vehicles per day. Based on this traffic load, the facility should have no adverse affects on the roads in the vicinity of the Gentilly Landfill. The majority of the truck routes leading to the facility are blacktop or concrete.

The proposed landfill will actually aid the environment by providing a more beneficial use for this existing property; as well as, eliminate the need to impact other "virgin" areas by sitting a new landfill at another location. The proposed landfill would restore the inherent value of the current property and once again enable productive use of this land that would otherwise remain untapped and restricted. Locating the proposed landfill at another location would introduce additional costs both economic and environmental to this project. These additional costs would include monetary expenses (land purchases, etc.) and environmental (impact to additional areas) costs associated with developing another site as a landfill location.

Based on the above-mentioned Cost/Benefit Analysis, it is obvious that the benefits to the community and the environment outweigh the environmental costs.

- C. **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing nonenvironmental benefits?**

RESPONSE: The Orleans Parish is fairly developed and the remaining open areas available for landfills in the parish are located on its eastern side. However, as is depicted in a 1994 aerial photograph of the site and the USGS 7.5 minute topographic map, existing industry and development or drainage features such as rivers, canals, and wetlands consume the remaining areas. The City of New Orleans does not operate any other Type III landfills therefore this project is practical and beneficial to the community. This project will provide an accessible, legal, economical, and safe facility to discard C&D debris in the New Orleans and surrounding areas. Other projects considered were not as practical, economical, beneficial, or as in demand as a C&D debris landfill. Since the facility will be constructed over a pre-existing landfill that had been in operation for several years and was already under LDEQ supervision, the project and location were ideal from both a regulatory and environmental standpoint. In addition, because of the sparse residential properties in the area, the site is well suited for Type III disposal activities.

- D. **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing nonenvironmental benefits?**

RESPONSE: There is no alternative site that would provide more protection to the environment than the Gentilly Landfill site, without curtailing non-environmental benefits. In addition, the "no action" alternative would result in greater impact to the environment, than not constructing the proposed Type III (C&D) Landfill over the existing closed landfill site.

Consideration of alternative sites may be viewed as less important in the perspective of an existing landfill site. The environmental impacts associated with siting a new facility are much greater than those resulting from the construction of a C&D landfill over a closed landfill site. However, the following analysis of potential alternative sites is provided that demonstrates that there are no alternative sites that would provide greater protection to the environment than the proposed Gentilly Landfill site.

In determining that the Gentilly Landfill site is the most favorable location, the City considered a number of factors as follows:

- Remote location/lack of populated areas;
- Consistent with land use;
- Proximity to sensitive environmental areas such as wetlands, recreational areas, historic or cultural areas;
- Availability of transportation infrastructure; and

- Relative environmental impact (existing landfill versus location of new facility).

In reviewing the potential alternative sites the City reviewed existing reports on the development of landfills in Orleans Parish. The City reviewed the 1992 *City of New Orleans Landfill Siting Project Report*, the findings of the 1994 Mayoral Task Force on Solid Waste, and the 2000 City of New Orleans Planning Commission Conditional Use Permit Amendment Request to permit a C&D Landfill.

In 1991 through 1992, the City of New Orleans conducted a comprehensive Landfill Siting Study. A copy of the *City of New Orleans Landfill Siting Project Report - June 1992* is enclosed as Attachment 17 to this Section. The purpose of the project was to identify the best site within Orleans Parish for the development of a City-owned solid waste management facility.

As part of the landfill siting process, a Public Advisory Committee (PAC) was formed, and included citizens, environmentalist, and business and technical leaders of the community. The PAC responsibility was to ensure that the public concerns were addressed. The approach used for public participation was based on the United States Environmental Protection Agency (USEPA) document, sites for *Our Solid Waste, a Guidebook for Effective Public Involvement*. The PAC was an integral part of the siting process, convening monthly for 9 months to advise and participate in the site selection process.

The approach used for this siting study was to systematically eliminate portions of Orleans Parish that did not meet various criteria. Various negative criteria were placed on a series of overlapping maps, and the areas remaining were identified as potential site areas for further investigation.

The decision-making process commenced with Orleans Parish land area as a whole; and by a process of elimination of negative sites, arrived at a small group of sites for evaluation, comparison, ranking, and final recommendation. The Landfill Siting criteria was developed and finalized with input from the PAC.

The landfill siting process employed three levels of evaluation that systematically eliminated areas from further consideration. Initially, seven potential sites were identified within Orleans Parish. Through the multi-level screening process, five sites were eliminated and the PAC forwarded two sites, Sites E and F, to the City Administration for further review. The two possible sites identified for further evaluation were located just south of the Intracoastal Waterway, and north of the St. Bernard Parish line. Louisiana Highway 47 (Paris Road) separated the two sites. The Gentilly Landfill site was not evaluated during the siting process, since the site was under closure.

On May 31, 1994, the Mayoral Task Force on Solid Waste was created by Executive Order with the purpose of re-evaluating the solid waste disposal options for the City of New Orleans. The mission of the Task Force was as follows:

- Review the Landfill Siting Study of the previous administration; Re-evaluated the conclusion and recommendations of the prior Landfill Site Study; and

- Investigate and evaluate all appropriate neighborhood and fiscal concerns, as well as, other regulatory issues required for permitting of a landfill site.

In August 1994, the Task Force completed their review of the landfill siting process, and determined that the City should investigate alternative landfill sites outside of Orleans Parish for the long-term disposal of solid waste.

In 2000, a request to permit a C&D Landfill was presented to the City of New Orleans Planning Commission. This proposed site is located at 16600 Chef Menteur Highway in the vicinity of Site C, which was reviewed in the *City of New Orleans Landfill Siting Study*. During the Landfill Siting Study, Site C was eliminated from further consideration because the site was located within 1,000 ft of an environmentally sensitive area, Bayou Sauvage National Wildlife Management Refuge, adjacent to commercial development and near residential areas. The surrounding areas to Site C are zoned residential and light industrial. The City Planning Commission for the proposed site at 16600 Chef Menteur Highway identified similar considerations.

Based on the review of the potential landfill sites in Orleans Parish, it is determined that the Gentilly Landfill site is the most favorable location for the development of a Type III (C&D) Landfill. The Gentilly Landfill site is in a remote relocation, and located in a heavy industrial area, and adjacent on the east and west sides by abandoned C&D landfill sites and the Gulf Intracoastal Waterway on the south. This surrounding area along Almonaster Boulevard is undeveloped and heavily wooded with some industrial development. There are no known sensitive environmental areas such as wetlands, recreational areas, historic, or cultural areas within 1,000 ft of the site.

The site is located on Almonaster Boulevard, which is a major roadway. The proposed Gentilly Landfill Type III is intended to replace the AMID Type III C&D Landfill that is nearing its design capacity. The proposed Gentilly Landfill Type III is in close proximity (less than 3 miles) to the AMID Landfill, and will provide uninterrupted service to this waste stream. The truck traffic to the Gentilly Landfill site will use the same roadways, as the traffic to the AMID Landfill. Therefore, the impact to existing traffic patterns will be minimal.

The proposed Gentilly Landfill Type III also benefits the environment by maximizing the property use without providing an environmental impact by locating the landfill in an undeveloped area. The C&D waste will provide additional fill material, and allow for the development of final contours that will be more conducive to proper drainage of the landfill site than under the existing Closure Plan. The proposed Gentilly Landfill Type III provides a greater environmental benefit, than the existing closed Gentilly Landfill due to the configuration of the landfill that will lessen the potential environmental impact of the underlying closed landfill due to the design of the proposed Type III Landfill.

In addition, the City of New Orleans is under a Compliance Order for the closure of the Gentilly Landfill. The majority of the site has been closed. However, the City does not have sufficient funds to complete the closure and provide post-closure monitoring of the site in

accordance with the approved Closure Plan. The City proposes to develop a Type III (C&D) Landfill over the closed landfill. The proposed operation of the Type III Landfill will allow the City to generate revenues to properly close the remainder of the existing site and provide post-closure monitoring.

As determined by the Landfill Siting Study, the land available for development in Orleans Parish is located predominately in New Orleans East. New Orleans East is an area where a high portion of the land, if not all, would be considered wetlands by the current practices of the USEPA and USACE in their wetlands determination. The development of the closed landfill site into a C&D landfill will minimize impact to wetland areas.

There does not exist another site in Orleans Parish that would avoid the adverse environmental impacts or provide more protection to the environment than the Gentilly Landfill site, without curtailing non-environmental benefits. By using an existing landfill site the overall impacts to transportation, socioeconomic, and the environment will be minimized.

- E. **Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing nonenvironmental benefits?**

RESPONSE: The proposed facility will take in materials such as broken lumber, concrete, drywall material, etc. The facility will also accept trees, tree stumps, branches, and various types of storm debris and land-clearing debris. With the exception of trees, tree stumps, and branches, the materials being disposed offer very little possibilities for reuse. The trees, stumps, and branches could be converted to compost and mulch, but this is not an everyday occurrence and would not aid in protecting the environment. The proposed facility will recycle incoming refuse such as tires and white goods, which are not allowed to be disposed in the landfill. In the event that these materials are unknowingly allowed into the landfill, they will be separated and temporarily stored on-site until they are delivered or picked up by a recycling facility and shipped off-site to a landfill permitted to receive this type of waste.

According to the Louisiana Water Quality Regulations, LAC 33:IX.23.B, the following requirements shall apply to the signatory page in this application:

Subchapter B. Permit Application and Special LPDES Program Requirements

2333. Signatories to permit applications and reports

A. All permit applications shall be signed as follows:

1. For a corporation - by a responsible corporate officer. For the purpose of this Section responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

(b) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship - by a general partner or the proprietor, respectively, or

3. For a municipality, parish, State, Federal or other public agency - either a principal executive officer or ranking elected official. For the purposes of this Section a principal executive officer of a Federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by permits, and other information requested by the state administrative authority shall be signed by a person described in LAC 33:IX.2333.A, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in LAC 33:IX.2333.A.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as a position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The written authorization is submitted to the state administrative authority.

C. Changes to authorization. If an authorization under LAC 33:IX.2333.B is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of LAC 33:IX.2333.B must be submitted to the state administrative authority prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Any person signing any document under LAC 33:IX.2333.A or B shall make the following certification:

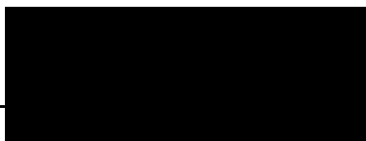
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

SIGNATORY AND AUTHORIZATION

Pursuant to the Water Quality Regulations (specifically LAC 33:IX.2333.A and B) which became effective October 20, 1995, the state permit application must be signed by a responsible individual as described in LAC 33:IX.2333.A and B and that person shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature



Name (Please Print)

Stephen F. Stumpf

Title

Managing Member

Date

September 11, 2003

Telephone

(504) 737-3205

CHECKLIST

To prevent any unnecessary delay in the processing of your application, please take a moment and check to be certain that the following items have been addressed and enclosed:

1. All blanks have been answered (NA if the question was not applicable).
2. All required maps and drawings are enclosed.
3. The appropriate person has signed the signatory page.

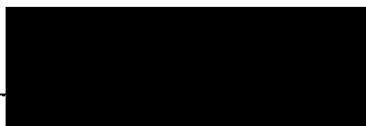
ANY APPLICATION THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. APPLICATION PROCESSING WILL NOT PROCEED UNTIL ALL REQUESTED INFORMATION HAS BEEN SUBMITTED.

SIGNATORY AND AUTHORIZATION

Pursuant to the Water Quality Regulations (specifically LAC 33:IX.2333.A and B) which became effective October 20, 1995, the state permit application must be signed by a responsible individual as described in LAC 33:IX.2333.A and B and that person shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature



Name (Please Print)

Lynn Wiltz

Title

Director, New Orleans Department of Sanitation

Date

September 11, 2003

Telephone

(504) 299-3670

CHECKLIST

To prevent any unnecessary delay in the processing of your application, please take a moment and check to be certain that the following items have been addressed and enclosed:

1. ALL blanks have been answered (NA if the question was not applicable).
2. All required maps and drawings are enclosed.
3. The appropriate person has signed the signatory page.

ANY APPLICATION THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. APPLICATION PROCESSING WILL NOT PROCEED UNTIL ALL REQUESTED INFORMATION HAS BEEN SUBMITTED.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Addendum to Permit Applications per LAC 33:I.1701

Introduction

This Addendum to Permit Applications provides information to the Permits Division which is used to comply with the requirements of LAC 33:I.1701 - Requirements for Obtaining a Permit. Authority to ask for this information is contained in the Louisiana Administrative Code, Title 33. Copies of this law are available from the Regulation Development Section of the Office of Environmental Assessment, or on the Internet at:

<http://www.deq.state.la.us/planning/regs/title33/index.htm>

Who Should Submit an Addendum to Permit Applications?

The Addendum to Permit Applications should be submitted for any permit application submitted for a new source and for all permit actions, including renewals and changes of ownership. Air permit modification requests are exempt from this requirement unless they include, or are limited to, a change of ownership.

What If I Previously Sent an Addendum to Permit Applications to DEQ?

You must submit this addendum with each permit application, as stated above. It is acceptable to submit a copy of a previously submitted form, if the original signature date is not more than twelve months old. Indicate the original submittal date and the permit number for which it was previously submitted. Please review the information to ensure that it is still correct.

What You Should Submit and What You Should Keep

Route the original and two photocopies to this agency. For Part 70 Air Permit applications, a copy should be submitted directly to EPA's Dallas office - EPA Region 6 (6PD-R), 1445 Ross Avenue, Suite. 1200, Dallas TX 75202-2733.

Acceptable Answers

"NA" is not an acceptable answer. If a particular section does not apply to you, explain why. Please attach additional sheets for the required information.

General

Do not write information in the top or left side margin of this form as file folder bindings may cover the information.

Step-by-Step Instructions

1 Media Type

Indicate whether this is for a Solid Waste, Air, Water, Hazardous Waste or Radiation Licensing application.

2 Agency Interest Number

If blank, type or print the Agency Interest Number in the space provided at the top of each page (if known); otherwise, leave blank.

3 Indicate if Copy of Previously Submitted Form

Indicate whether or not this is a copy of a previously submitted form. If yes, indicate the original submittal date and the permit number for which it was previously submitted. You may not submit a copy which has an original signature date that is more than twelve months old.

4 Company Name, Parent Company, Plant Name and Location

If blank, type or print the name of the company, the name of its parent, the name of the plant, if any, the parish where the plant is located, and the closest town in the same parish as the facility. Check the appropriate box to indicate if the permittee is the owner or operator of the facility.

5 List of States With Similar Actions

Please provide a list of the states where you, as applicant, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying.

6 Outstanding Fees

Do you owe any outstanding fees or final penalties to the Department? If so, please explain.

7 Registration with Secretary of State

If your company is a corporation or a limited liability company, please provide proof of registration with the Secretary of State.

8 Responsible Official

Enter the name, address, and phone number of the responsible company official. Part 70 sources must meet the requirements of LAC 33:III.502 regarding the Responsible Official.

9 Certification by Responsible Official

An authorized company agent should sign and date the form confirming its accuracy and completeness.

Media Type (check one)


Hazardous Waste ☐ Air ☐
Solid Waste ☐ Water ☒
Radiation Licensing ☐

Agency Interest Number: _____

Is this a copy of a previously submitted form? Yes ☐ No ☐

If yes, indicate the original submittal date: _____

If yes, indicate the original permit number: _____

Department of Environmental Quality Permits Division P.O. Box 82135 Baton Rouge, LA 70884-2135 (225) 765-0219		Addendum to Permit Applications per LAC 33:1.1701		
Please Type Or Print	Company Name City of New Orleans		<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator	For Permits Division Use Only
	Parent Company (If Company Name given above is a division)			
	Plant name (If any) Gentilly Landfill "Type III"			
	Nearest town New Orleans, LA Parish where located Orleans			

Use attachments to provide the required information. "NA" is not an acceptable answer. If a particular section does not apply to you, explain why.

1. Please provide a list of the states where you, as applicant*, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying.

*This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.

2. Do you owe any outstanding fees or final penalties to the Department? No ☒ Yes ☐ If yes, please explain.


3. Is your company a corporation or limited liability company? No ☒ Yes ☐ If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State.

Certification:

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Addendum to the Permit Application, including all attachments thereto are true, accurate, and complete.

Responsible Official

Name	Ms. Lynn Wiltz
Title	Director
Company	City of New Orleans
Suite, mail drop, or division	Department of Sanitation
Street or P.O. Box	1340 Poydras St., Suite 750

City	New Orleans	State	LA	Zip	70112
Business phone					
Signature					
Date					

The Department may require the submission of additional information if it deems such information necessary.

OUTFALL NO. 3

6. Is this facility located in a designated industrial area? Yes X No

SECTION II - DISCHARGE INFORMATION

Complete Section II for each discharge outfall. Outfalls are discharge points. An external outfall is a discrete discharge point beyond which the waste stream receives no further mixing with other waste streams prior to discharging into a receiving water. An internal outfall is an outfall for a waste stream that combines with other waste stream(s) before discharging into an "external" outfall. Please provide your after-treatment test results in the units asked for on the application. For proposed facilities, estimates should be provided for any expected contaminants even though the facility is not in place yet.

A. Complete this section for each discharge outfall.

1. **Outfall Location.** Provide a description of the physical location for each outfall and coordinates to the nearest 15 seconds (provide additional pages if more than one outfall).

Outfall No. 3

Latitude: 30 deg. 00 min. 33 sec. Longitude: 89 deg. 57 min. 53 sec.

2. If new discharge, when do you expect to begin discharging? 4th Quarter 2003
3. **Outfall Identification.** Provide: 1. A description of all operations contributing wastewater to the effluent for the outfall including process wastewater, sanitary wastewater, cooling water, and storm water runoff; 2. The average flow contributed by each operation; and 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

OUT-FALL No.	OPERATION(S) CONTRIBUTING FLOW		TREATMENT
	1. OPERATION (list)	2. AVERAGE FLOW (include units)	3. DESCRIPTION
3	Storm water from landfill surface	6,091.93 ft ³ /day	None
	Ancillary structures	210.06 ft ³ /day	None

4. Except storm water, if any of the applicant's discharges are intermittent or seasonal, please complete the following table.

FREQUENCY (specify average)		FLOW			
Days per Week	Which Months per Year	Flow Rate (mgd)		Total Volume (specify with units)	
		long term average	daily maximum	long term average	Daily maximum
N/A	N/A	N/A	N/A	N/A	N/A

Storm water only will be discharged.

5. Treatment Methods. Please be specific for each outfall.

Storm water is the only discharge from the facility. No treatment will occur.

6. Disposal. List any solid or liquid waste disposal methods and facilities. Include a description of the ultimate disposal of any solid or fluid wastes that are disposed of other than by discharge.

No liquid waste will be disposed of at this facility. Construction/demolition/wood-waste (C&D) debris will enter the facility through the main entrance and be screened for non-acceptable materials at the guard gate. Acceptable waste will be taken to the landfill working area where it will be placed. Non-acceptable waste will be rejected immediately or stored in covered roll-off boxes to be disposed of off-site according to contents at least every seven days. Upon placement of the C&D waste, weekly, interim, and final cover soils will be placed over the waste in accordance with applicable regulations.

7. **Receiving Waters.** Indicate how the wastewater reaches state waters (named water bodies). This will usually be either "directly", by ☐ open ditch" (if it is a highway ditch, indicate the highway), or by "pipe". Please specifically name all of the minor water bodies that your wastewater will travel through on the way to a major water body. This information can be obtained from U.S.G.S. Quadrangle Maps. Include river mile of discharge point if available.

Wastewater Flows. CHECK ONE:

☒ directly; ☐ by open ditch; ☐ by pipe; ☐ by Almonaster Avenue (open ditch);
(specify)

into mile 10 of the Intracoastal Waterway; thence into the Mississippi River;

thence into Gulf of Mexico; thence into N/A
(name of stream, lake, marsh or underground horizon receiving the waste)

8. **Lab Analysis - All Dischargers:** Make additional copies as needed. Sampling and analytical protocols must conform to the requirements in LAC 33:IX.23 Subchapters B and V, and 40 CFR Part 136; when no analytical method is approved, the applicant may use any suitable method but must provide a description of the method. For storm water discharges, indicate date & duration of storm event sampled, total inches of precipitation, and number of hours since the end of the previous storm event which was greater than 0.1 inches.

For each outfall, this section must be completed for each pollutant unless the applicant demonstrates that a waiver for that pollutant is appropriate.

For Discharges of Landfill Wastewater (includes cell dewatering wastewater, vehicle wash water, and contaminated storm water) From a Construction/Demolition Debris and Woodwaste Landfill complete the table below. (Proposed facilities shall have up to two years from commencement of operations to complete and submit the information below. An estimate based on engineering calculations and/or knowledge may be submitted in the interim.):

OUTFALL NO. & DESCRIPTION: Outfall #3 Storm Water – No landfill wastewater will be discharged from this facility. Only storm water will be discharged. This section is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb./day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
BOD ₅				
COD				
TOC				
Oil and Grease				
Ammonia (as N)				
Alpha Terpineol				
Benzoic Acid				
Total Suspended Solids				
P-Cresol				
Toluene				
Total Zinc				
Total Copper				
Total Mercury				
Total Lead				
	Daily Maximum	Maximum 30-Day*	30-Day Low Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

* Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Washrack Wastewater, Maintenance and Repair Shop Floor Washdown complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #3 Storm Water – The Gentilly Landfill “Type III” does not contain a wash rack or maintenance and repair shop. This section is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lbs/day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
COD				
Oil and Grease				
Total Suspended Solids				
	Daily Maximum	Maximum 30-Day*	Flow*	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Soap and/or Detergents (Amounts Used)				
Discharge Duration (hr./day)				
pH (s.u.)				

- * Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Uncontaminated Storm Water From Areas Outside of the Construction/Demolition Debris and Woodwaste Landfill Area complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #3 - Open Ditch, Storm Water.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lb/day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
COD				
TOC				
Oil and Grease				
	Daily Maximum	Maximum 30-Day ^a	30-Day Low Flow ^a	Method of Measure/Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

- * Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

For Discharges of Treated Sanitary Wastewater complete the table below:

OUTFALL NO. & DESCRIPTION: Outfall #3 Storm Water – No treated sanitary wastewater will be discharged. This item is non-applicable.				
	EFFLUENT			
	CONCENTRATION (ppm)		MASS (lbs/day)	
POLLUTANT	Mo. Avg.	Daily Max.	Mo. Avg.	Daily Max.
BOD ₅				
Oil and Grease				
Total Suspended Solids				
Total Residual Chlorine (if chlorine is used)				
Fecal Coliform Colonies/100 ml				
	Daily Maximum	Max.	30-Day Low Flow*	Method of Measure/ Estimate
Flow (GPD)				
	Minimum	Maximum		
Discharge Duration (hr./day)				
pH (s.u.)				

- * Within the previous two years. (The Maximum 30-Day value is the highest value of the averages of all daily values taken during each calendar month.)

10. **NEW SOURCE/DISCHARGERS DISCHARGING PROCESS WASTEWATER**
complete the following items a) and b):

- a) **ENGINEERING REPORT:** Are there any technical evaluations concerning your wastewater treatment system, including engineering reports or pilot plant studies?

There is no wastewater treatment system proposed for the site. Therefore,
this response is non-applicable.

- b) **SIMILAR OPERATIONS:** Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this facility with respect to processes, wastewater constituents, or wastewater treatment.

Crescent Acres Landfill - located approximately 1.14 miles south west of
the Gentilly Landfill "Type III".

- A. Were any of the analyses reported in Section II, Item A above performed by a contract lab or consulting firm? N/A If "yes", provide firm name and address, phone number, and pollutants analyzed.

No

- B. List pertinent physical and chemical properties (e.g., toxic components, taste and odor compounds, heavy metals, etc.) that may be associated with the discharge.

The Gentilly Landfill "Type III" will not discharge process wastewater.
Only clean storm water will be discharged.

- C. **Toxicity Data.** List any bioassay tests conducted on the effluent from the facility. Provide a summary of the test results.

No bioassay test have been performed since this is a proposed facility.

SECTION III - DIAGRAMS AND MAPS

- A. **Flow Diagram.** Attach a line drawing of the water flow through the facility with a water balance showing operations contributing wastewater to the effluent and treatment units. The water balance must show average and maximum flows at intake and discharge points and between units, including treatment units. If a water balance cannot be determined, the applicant may provide instead a pictorial description of the nature and amount of any sources of water and any collection and treatment measures.

See Appendix 1 for storm water drainage calculations describing the volume of storm water flow through the facility including intake and outfall locations.

- B. **Site Diagram.** Attach to this application a complete site diagram of the facility demonstrating how the wastewater flows through the facility into each clearly labeled discharge point (including all treatment points). Indicate storm water flow pattern on this map or provide additional maps if needed. Identify the location of the front gate of the facility.

See Figure 1 and Figure 2 located in Outfall No. 3, Attachment 2.

- C. **Topographic Map.** Attach to this application a topographic map (or other map if topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its discharge structures; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area. The wastewater pathway should be highlighted from the facility to the first named water body.

See Figure 3 located in Outfall No. 3, Attachment 2.

A U.S.G.S. 1:24,000 scale map (7.5' Quadrangle) would be appropriate for this item. Appropriate maps can be obtained from local government agencies such as DOTD or Office of Public Works. Private map companies can also supply these maps. If a map cannot be located through these sources, the U. S. Geological Survey can be contacted at the following address.

U. S. Geological Survey
Stennis Space Center
Bay St. Louis, MS 39529

Customer Services
(228)-688-3541

SECTION IV - ENVIRONMENTAL IMPACT

There is no requirement that the information furnished in response to this questionnaire be certified by a professional engineer or other expert. Simple "yes" or "no" answers will not be accepted. A measured response should be given for each question posed, taking into consideration appropriate factors such as: the environmental sensitivity of the area, both for the proposed site and alternative sites; impacts on the economy of the area, both favorable and unfavorable; availability of raw materials, fuels and transportation and the impact of potential sites on their availability and economics; relationship of the facility to other facilities, either within or independent of the company, and the effects of location on these relationships; and other factors which may be appropriate on a case-by-case basis. (Attach any additional pages needed.)

- A. Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

See Section IV A Response.

- B. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweigh the former?

See Section IV B Response.

- C. Are there alternative projects, which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

See Section IV C Response.

- D. Are there alternative sites, which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

See Section IV D Response.

- E. Are there mitigating measures, which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

See Section IV Response.

SECTION IV - ENVIRONMENTAL IMPACT RESPONSE

- A. **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?**

RESPONSE: All requirements pertaining to this type of facility, as set forth in the LAC, have been met. The area is well suited for a Type III C&D debris landfill; since the proposed landfill will be constructed over an existing previously "closed" landfill. In addition, the area remains sparsely populated and the naturally occurring soils underlying the site are comprised mainly of fat and silty clays. The perimeter of the facility will be fenced and gates will control access to the property. The gates will be locked during non-operating hours. Since the site is to be built over a closed landfill site, issues related to sensitive receptors such as wetlands, and/or cultural/historical sites within close proximity of the facility were previously addressed. Only Type III C&D debris, wood waste, and exempt waste will be accepted at this facility. The receipt of hazardous waste will be strictly prohibited and prevented. The following media of the environment will be affected by the facility:

AIR: Minor amounts of dust and noise will be generated due to the nature of the facility. However, these problems will only occur during normal operating hours (maximum operating hours are 6:00 a.m. to 7:00 p.m., Monday through Sunday). All-weather roads lined will eliminate the majority of the dust that might be generated. In addition, the facility is located in the center of a 198-acre tract of land therefore the dust is unlikely to leave this property. Because only C&D debris will be disposed at the facility, no undesirable odors will be generated. Likewise, C&D waste in general contains minimum amounts of dust containing materials that in turn minimizes dust emissions from the wastes. Most of the anticipated dust emissions from the facility will be the results of traffic to and from the site, and the application of the interim and final covers. Furthermore, the site is located in a sparsely populated area.

WATER: There are no existing or planned bodies of surface waters (i.e., ditches, ponds, etc.) that have the potential to come into contact with the C&D debris. Since the landfill will be constructed above the existing ground surface for the site and the surrounding area, any potential storm water will flow away from the facility and so there is no concern for contamination of surface waters after closure of the proposed landfill. During operation of the proposed landfill, storm water will be routed away from the fill areas of the landfill (working area) by the perimeter ditches. Only storm water falling directly into the working area will have the potential for storm water contamination. This storm water will be collected and pumped into the perimeter ditches for discharge off-site, a permit for this intermittent discharge will be submitted to the LDEQ.

The potential for elevated total organic carbon (TOC) levels in ground water could exist, on a theoretical basis, if leaching into the ground water occurs because of leaks in the clay liner. However, the facility will be constructed over a pre-existing landfill and any leaching from the proposed landfill would also have to transverse the vertical limits of the "closed" landfill before leaching into the in-situ soils underlying the site.

Since as previously discussed, the majority of these in-situ soils are fat or silty clays, these soils should be expected to provide reasonable protection for the ground water and the ground water should not be affected by the proposed landfill.

SOIL: Soils in contact with the C&D debris may experience TOC levels that are higher than normal. Another negative potential would be basic litter during the life of the landfill. However, litter will be policed by landfill personnel and picked up and properly disposed of on a daily basis. In addition, to control any potential blowing litter due to high winds, movable hurricane fencing will be maintained (when necessary) around the working area (fill area) that has not yet undergone interim cover.

FLORA/FAUNA: The landfill will be constructed within the footprint of a previously "closed" landfill that has undergone final cover and closure as approved by the LDEQ. As such, no "virgin" flora/fauna will be impacted by the proposed landfill operations. Currently, the existing prairie grasses that were planted as erosion protection for the final cover of the previously "closed" landfill will be impacted by proposed landfill operations. Upon completion to final contours for the proposed landfill, these areas will be re-seeded with native grasses to return the area to a more natural setting. Fauna is not expected to be affected.

In the future, after closure of the landfill, the property will have a limited/restricted use (such as recreational or pasture land). However, this site is already restricted in its use due to the existing previously "closed" landfill underlying the area. The proposed landfill will actually aid the environment by providing a more beneficial use for this existing property; as well as, eliminate the need to impact other "virgin" areas by siting a new landfill at another location. The proposed landfill would restore the inherent value of the property and once again enable productive use of this land that would otherwise remain untapped and restricted. According to the Master Schedule of Implementation/Closure Plan (included in Attachment 10), the site will be returned to limited/restricted use approximately 13.5 years after permit issuance. However, it should be noted that this is only an estimate since the actual time will be dependent on the actual acceptance rate of the facility during operation.

B. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweigh the former?

RESPONSE: The facility should have a positive impact by allowing the public a safe, regulated location to discard construction debris rather than contributing to illegal dumping along the roadside. In addition, in the event that a natural disaster such as a hurricane should occur, the facility will provide access for a quick cleanup in the area, which is beneficial to the community and the environment. The facility's location in the east side of New Orleans and southeast part of Orleans Parish allows convenient access to a C&D Landfill

in an area that has few alternatives. The facility and its location will decrease air emissions by reducing travel time to an alternate site.

Another benefit is the fact, that the facility will be located on an existing property owned or controlled by the City of New Orleans and, therefore, eliminate the economic expense of purchase additional property of use as a landfill. The facility will also create jobs for local residents.

Possible environmental impacts deriving from the proposed site are minimal. The facility is not expected to become a societal nuisance due to the sparse population in the vicinity of the landfill. Traffic in and out of the facility should not interrupt routine traffic flow or affect the boarding or exiting of school buses in the area.

The site is well suited for a Type III facility due to its natural silty clays beneath the proposed fill area, along with the extreme depth to the first water bearing zone. Minor potential for surface water coming in contact with the construction debris during unexpected thunderstorms could produce elevated TOC levels within the fill area. However, as proposed in the PA, the fill area will be kept small and interim cover will take place at least every 30 days. In the event that storm water does come in contact with the debris, the amount will be negligible due to the small areas in which fill is applied. The storm water that does come in contact with debris will be contained within a levee maintained around the fill area. The contact water will be pumped into the perimeter ditches for off-site discharge under a Storm Water Permit.

Another potential environmental impact is the possibility for minor pieces of debris to fall from the transportation trucks in route to the facility. However, as required by state regulations for transporters, the majority of the transportation vehicles, i.e., trucks and trailers, will be equipped with covers to prevent this. Truck traffic could increase dust in the area. Based upon the facility's past operations, the amount of truck traffic at the facility is dependant on the economy and weather conditions. The facility experiences seasonal fluctuations. For example, winter months experience less construction work than summer months. However, based on past operations, it is estimated that the facility will average 272 waste bearing vehicles per day. Based on this traffic load, the facility should have no adverse affects on the roads in the vicinity of the Gentilly Landfill. The majority of the truck routes leading to the facility are blacktop or concrete.

The proposed landfill will actually aid the environment by providing a more beneficial use for this existing property; as well as, eliminate the need to impact other "virgin" areas by siting a new landfill at another location. The proposed landfill would restore the inherit value of the current property and once again enable productive use of this land that would otherwise remain untapped and restricted. Locating the proposed landfill at another location would introduce additional costs both economic and environmental to this project. These additional costs would include monetary expenses (land purchases, etc.) and environmental (impact to additional areas) costs associated with developing another site as a landfill location.

Based on the above-mentioned Cost/Benefit Analysis, it is obvious that the benefits to the community and the environment outweigh the environmental costs.

- C. **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing nonenvironmental benefits?**

RESPONSE: The Orleans Parish is fairly developed and the remaining open areas available for landfills in the parish are located on its eastern side. However, as is depicted in a 1994 aerial photograph of the site and the USGS 7.5 minute topographic map, existing industry and development or drainage features such as rivers, canals, and wetlands consume the remaining areas. The City of New Orleans does not operate any other Type III landfills therefore this project is practical and beneficial to the community. This project will provide an accessible, legal, economical, and safe facility to discard C&D debris in the New Orleans and surrounding areas. Other projects considered were not as practical, economical, beneficial, or as in demand as a C&D debris landfill. Since the facility will be constructed over a pre-existing landfill that had been in operation for several years and was already under LDEQ supervision, the project and location were ideal from both a regulatory and environmental standpoint. In addition, because of the sparse residential properties in the area, the site is well suited for Type III disposal activities.

- D. **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing nonenvironmental benefits?**

RESPONSE: There is no alternative site that would provide more protection to the environment than the Gentilly Landfill site, without curtailing non-environmental benefits. In addition, the "no action" alternative would result in greater impact to the environment, than not constructing the proposed Type III (C&D) Landfill over the existing closed landfill site.

Consideration of alternative sites may be viewed as less important in the perspective of an existing landfill site. The environmental impacts associated with siting a new facility are much greater than those resulting from the construction of a C&D landfill over a closed landfill site. However, the following analysis of potential alternative sites is provided that demonstrates that there are no alternative sites that would provide greater protection to the environment than the proposed Gentilly Landfill site.

In determining that the Gentilly Landfill site is the most favorable location, the City considered a number of factors as follows:

- Remote location/lack of populated areas;
- Consistent with land use;
- Proximity to sensitive environmental areas such as wetlands, recreational areas, historic or cultural areas;
- Availability of transportation infrastructure; and

- Relative environmental impact (existing landfill versus location of new facility).

In reviewing the potential alternative sites the City reviewed existing reports on the development of landfills in Orleans Parish. The City reviewed the *1992 City of New Orleans Landfill Siting Project Report*, the findings of the 1994 Mayoral Task Force on Solid Waste, and the 2000 City of New Orleans Planning Commission Conditional Use Permit Amendment Request to permit a C&D Landfill.

In 1991 through 1992, the City of New Orleans conducted a comprehensive Landfill Siting Study. A copy of the *City of New Orleans Landfill Siting Project Report* - June 1992 is enclosed as Attachment 17 to this Section. The purpose of the project was to identify the best site within Orleans Parish for the development of a City-owned solid waste management facility.

As part of the landfill siting process, a Public Advisory Committee (PAC) was formed, and included citizens, environmentalist, and business and technical leaders of the community. The PAC responsibility was to ensure that the public concerns were addressed. The approach used for public participation was based on the United States Environmental Protection Agency (USEPA) document, sites for *Our Solid Waste, a Guidebook for Effective Public Involvement*. The PAC was an integral part of the siting process, convening monthly for 9 months to advise and participate in the site selection process.

The approach used for this siting study was to systematically eliminate portions of Orleans Parish that did not meet various criteria. Various negative criteria were placed on a series of overlapping maps, and the areas remaining were identified as potential site areas for further investigation.

The decision-making process commenced with Orleans Parish land area as a whole; and by a process of elimination of negative sites, arrived at a small group of sites for evaluation, comparison, ranking, and final recommendation. The Landfill Siting criteria was developed and finalized with input from the PAC.

The landfill siting process employed three levels of evaluation that systematically eliminated areas from further consideration. Initially, seven potential sites were identified within Orleans Parish. Through the multi-level screening process, five sites were eliminated and the PAC forwarded two sites, Sites E and F, to the City Administration for further review. The two possible sites identified for further evaluation were located just south of the Intracoastal Waterway, and north of the St. Bernard Parish line. Louisiana Highway 47 (Paris Road) separated the two sites. The Gentilly Landfill site was not evaluated during the siting process, since the site was under closure.

On May 31, 1994, the Mayoral Task Force on Solid Waste was created by Executive Order with the purpose of re-evaluating the solid waste disposal options for the City of New Orleans. The mission of the Task Force was as follows:

- Review the Landfill Siting Study of the previous administration; Re-evaluated the conclusion and recommendations of the prior Landfill Site Study; and

- Investigate and evaluate all appropriate neighborhood and fiscal concerns, as well as, other regulatory issues required for permitting of a landfill site.

In August 1994, the Task Force completed their review of the landfill siting process, and determined that the City should investigate alternative landfill sites outside of Orleans Parish for the long-term disposal of solid waste.

In 2000, a request to permit a C&D Landfill was presented to the City of New Orleans Planning Commission. This proposed site is located at 16600 Chef Menteur Highway in the vicinity of Site C, which was reviewed in the *City of New Orleans Landfill Siting Study*. During the Landfill Siting Study, Site C was eliminated from further consideration because the site was located within 1,000 ft of an environmentally sensitive area, Bayou Sauvage National Wildlife Management Refuge, adjacent to commercial development and near residential areas. The surrounding areas to Site C are zoned residential and light industrial. The City Planning Commission for the proposed site at 16600 Chef Menteur Highway identified similar considerations.

Based on the review of the potential landfill sites in Orleans Parish, it is determined that the Gentilly Landfill site is the most favorable location for the development of a Type III (C&D) Landfill. The Gentilly Landfill site is in a remote relocation, and located in a heavy industrial area, and adjacent on the east and west sides by abandoned C&D landfill sites and the Gulf Intracoastal Waterway on the south. This surrounding area along Almonaster Boulevard is undeveloped and heavily wooded with some industrial development. There are no known sensitive environmental areas such as wetlands, recreational areas, historic, or cultural areas within 1,000 ft of the site.

The site is located on Almonaster Boulevard, which is a major roadway. The proposed Gentilly Landfill Type III is intended to replace the AMID Type III C&D Landfill that is nearing its design capacity. The proposed Gentilly Landfill Type III is in close proximity (less than 3 miles) to the AMID Landfill, and will provide uninterrupted service to this waste stream. The truck traffic to the Gentilly Landfill site will use the same roadways, as the traffic to the AMID Landfill. Therefore, the impact to existing traffic patterns will be minimal.

The proposed Gentilly Landfill Type III also benefits the environment by maximizing the property use without providing an environmental impact by locating the landfill in an undeveloped area. The C&D waste will provide additional fill material, and allow for the development of final contours that will be more conducive to proper drainage of the landfill site than under the existing Closure Plan. The proposed Gentilly Landfill Type III provides a greater environmental benefit, than the existing closed Gentilly Landfill due to the configuration of the landfill that will lessen the potential environmental impact of the underlying closed landfill due to the design of the proposed Type III Landfill.

In addition, the City of New Orleans is under a Compliance Order for the closure of the Gentilly Landfill. The majority of the site has been closed. However, the City does not have sufficient funds to complete the closure and provide post-closure monitoring of the site in

accordance with the approved Closure Plan. The City proposes to develop a Type III (C&D) Landfill over the closed landfill. The proposed operation of the Type III Landfill will allow the City to generate revenues to properly close the remainder of the existing site and provide post-closure monitoring.

As determined by the Landfill Siting Study, the land available for development in Orleans Parish is located predominately in New Orleans East. New Orleans East is an area where a high portion of the land, if not all, would be considered wetlands by the current practices of the USEPA and USACE in their wetlands determination. The development of the closed landfill site into a C&D landfill will minimize impact to wetland areas.

There does not exist another site in Orleans Parish that would avoid the adverse environmental impacts or provide more protection to the environment than the Gentilly Landfill site, without curtailing non-environmental benefits. By using an existing landfill site the overall impacts to transportation, socioeconomic, and the environment will be minimized.

E. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing nonenvironmental benefits?

RESPONSE: The proposed facility will take in materials such as broken lumber, concrete, drywall material, etc. The facility will also accept trees, tree stumps, branches, and various types of storm debris and land-clearing debris. With the exception of trees, tree stumps, and branches, the materials being disposed offer very little possibilities for reuse. The trees, stumps, and branches could be converted to compost and mulch, but this is not an everyday occurrence and would not aid in protecting the environment. The proposed facility will recycle incoming refuse such as tires and white goods, which are not allowed to be disposed in the landfill. In the event that these materials are unknowingly allowed into the landfill, they will be separated and temporarily stored on-site until they are delivered or picked up by a recycling facility and shipped off-site to a landfill permitted to receive this type of waste.

According to the Louisiana Water Quality Regulations, LAC 33:IX.23.B, the following requirements shall apply to the signatory page in this application:

Subchapter B. Permit Application and Special LPDES Program Requirements

2333. Signatories to permit applications and reports

A. All permit applications shall be signed as follows:

1. For a corporation - by a responsible corporate officer. For the purpose of this Section responsible corporate officer means:
 - (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
 - (b) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. For a partnership or sole proprietorship - by a general partner or the proprietor, respectively; or
3. For a municipality, parish, State, Federal or other public agency - either a principal executive officer or ranking elected official. For the purposes of this Section a principal executive officer of a Federal agency includes:
 - (a) The chief executive officer of the agency, or
 - (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by permits, and other information requested by the state administrative authority shall be signed by a person described in LAC 33:IX.2333.A, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in LAC 33:IX.2333.A.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as a position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The written authorization is submitted to the state administrative authority.

C. Changes to authorization. If an authorization under LAC 33:IX.2333.B is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of LAC 33:IX.2333.B must be submitted to the state administrative authority prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Any person signing any document under LAC 33:IX.2333.A or B shall make the following certification:

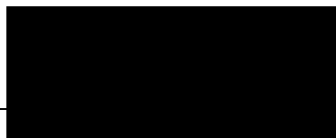
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

SIGNATORY AND AUTHORIZATION

Pursuant to the Water Quality Regulations (specifically LAC 33:IX.2333.A and B) which became effective October 20, 1995, the state permit application must be signed by a responsible individual as described in LAC 33:IX.2333.A and B and that person shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature



Name (Please Print)

Stephen F. Stumpf

Title

Managing Member

Date

September 11, 2003

Telephone

(504) 737-3205

CHECKLIST

To prevent any unnecessary delay in the processing of your application, please take a moment and check to be certain that the following items have been addressed and enclosed:

1. ALL blanks have been answered (NA if the question was not applicable).
2. All required maps and drawings are enclosed.
3. The appropriate person has signed the signatory page.

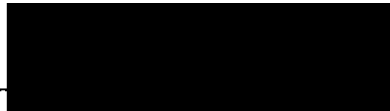
ANY APPLICATION THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. APPLICATION PROCESSING WILL NOT PROCEED UNTIL ALL REQUESTED INFORMATION HAS BEEN SUBMITTED.

SIGNATORY AND AUTHORIZATION

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"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature



Name (Please Print)

Lynn Wiltz

Veronica White

Title

Director, New Orleans Department of Sanitation

Date

September 11, 2003

Telephone

(504) 299-3670

CHECKLIST

To prevent any unnecessary delay in the processing of your application, please take a moment and check to be certain that the following items have been addressed and enclosed:

1. ALL blanks have been answered (NA if the question was not applicable).
2. All required maps and drawings are enclosed.
3. The appropriate person has signed the signatory page.

ANY APPLICATION THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. APPLICATION PROCESSING WILL NOT PROCEED UNTIL ALL REQUESTED INFORMATION HAS BEEN SUBMITTED.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Addendum to Permit Applications per LAC 33:I.1701

Introduction

This Addendum to Permit Applications provides information to the Permits Division which is used to comply with the requirements of LAC 33:I.1701 - Requirements for Obtaining a Permit. Authority to ask for this information is contained in the Louisiana Administrative Code, Title 33. Copies of this law are available from the Regulation Development Section of the Office of Environmental Assessment, or on the Internet at:
<http://www.deq.state.la.us/planning/regs/title33/index.htm>

Who Should Submit an Addendum to Permit Applications?

The Addendum to Permit Applications should be submitted for any permit application submitted for a new source and for all permit actions, including renewals and changes of ownership. Air permit modification requests are exempt from this requirement unless they include, or are limited to, a change of ownership.

What If I Previously Sent an Addendum to Permit Applications to DEQ?

You must submit this addendum with each permit application, as stated above. It is acceptable to submit a copy of a previously submitted form, if the original signature date is not more than twelve months old. Indicate the original submittal date and the permit number for which it was previously submitted. Please review the information to ensure that it is still correct.

What You Should Submit and What You Should Keep

Route the original and two photocopies to this agency. For Part 70 Air Permit applications, a copy should be submitted directly to EPA's Dallas office - EPA Region 6 (6PD-R), 1445 Ross Avenue, Suite. 1200, Dallas TX 75202-2733.

Acceptable Answers

"NA" is not an acceptable answer. If a particular section does not apply to you, explain why. Please attach additional sheets for the required information.

General

Do not write information in the top or left side margin of this form as file folder bindings may cover the information.

Step-by-Step Instructions

1 Media Type

Indicate whether this is for a Solid Waste, Air, Water, Hazardous Waste or Radiation Licensing application.

2 Agency Interest Number

If blank, type or print the Agency Interest Number in the space provided at the top of each page (if known); otherwise, leave blank.

3 Indicate if Copy of Previously Submitted Form

Indicate whether or not this is a copy of a previously submitted form. If yes, indicate the original submittal date and the permit number for which it was previously submitted. You may not submit a copy which has an original signature date that is more than twelve months old.

4 Company Name, Parent Company, Plant Name and Location

If blank, type or print the name of the company, the name of its parent, the name of the plant, if any, the parish where the plant is located, and the closest town in the same parish as the facility. Check the appropriate box to indicate if the permittee is the owner or operator of the facility.

5 List of States With Similar Actions

Please provide a list of the states where you, as applicant, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying.

6 Outstanding Fees

Do you owe any outstanding fees or final penalties to the Department? If so, please explain.

7 Registration with Secretary of State

If your company is a corporation or a limited liability company, please provide proof of registration with the Secretary of State.

8 Responsible Official

Enter the name, address, and phone number of the responsible company official. Part 70 sources must meet the requirements of LAC 33:III.502 regarding the Responsible Official.

9 Certification by Responsible Official

An authorized company agent should sign and date the form confirming its accuracy and completeness.

Media Type (check one)


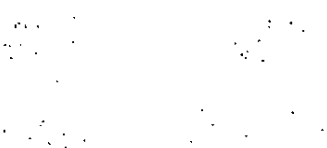
Hazardous Waste ☐ Air ☐
Solid Waste ☐ Water ☒
Radiation Licensing ☐

Agency Interest Number: _____

Is this a copy of a previously submitted form? Yes ☐ No ☐

If yes, indicate the original submittal date: _____

If yes, indicate the original permit number: _____

Department of Environmental Quality Permits Division P.O. Box 82135 Baton Rouge, LA 70884-2135 (225) 765-0219		Addendum to Permit Applications per LAC 33:I.1701		
Please Type Or Print	Company Name <div style="text-align: center;">City of New Orleans</div>	<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator	For Permits Division Use Only <div style="text-align: center;">  </div>	
	Parent Company (if Company Name given above is a division)			
	Plant name (if any) <div style="text-align: center;">Gentilly Landfill "Type III"</div>			
	Nearest town <div style="text-align: center;">New Orleans, LA</div>	Parish where located <div style="text-align: center;">Orleans</div>		

Use attachments to provide the required information. "NA" is not an acceptable answer. If a particular section does not apply to you, explain why.

- Please provide a list of the states where you, as applicant*, have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying.

*This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.


- Do you owe any outstanding fees or final penalties to the Department? No ☒ Yes ☐ If yes, please explain.
- Is your company a corporation or limited liability company? No ☒ Yes ☐ If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State.

Certification:

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Addendum to the Permit Application, including all attachments thereto are true, accurate, and complete.

Responsible Official

Name	Ms. Lynn Wiltz
Title	Director
Company	City of New Orleans
Suite, mail drop, or division	Department of Sanitation
Street or P.O. Box	1340 Poydras St., Suite 750

City	New Orleans	State	LA	Zip	70112
Business phone					
Signature of responsible official					
Date	9/11/03				

The Department may require the submission of additional information if it deems such information necessary.